

DESIGN AND DEVELOPMENT OF  
ACCEPTANCE AND COMMITMENT THERAPY (ACT)  
BIBLIOTHERAPY MODULE FOR SUSTAINED  
DIETARY BEHAVIOUR CHANGE

BY

AYAT BINTI IBRAHIM

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## ABSTRACT

The prevalence of overweight and obesity continues to rise globally, including in Malaysia. Conventional weight management strategies that focus primarily on diet and exercise often lead to short-term success but fail to sustain long-term healthy eating behaviour. This study aimed to harness human values as determinants of sustained dietary behaviour change through the Acceptance and Commitment Therapy (ACT) framework. Adopting a qualitative Design and Development Research (DDR) Type I guided by the ADDIE model, the study systematically progressed through analysis, design, and development phases. Multiple approaches were employed, including semi-structured interviews, document analysis, reflective journaling, and psychological assessment using the Acceptance and Action Questionnaire–Weight (AAQ-W). The study involved two groups, comprising a total of 14 participants: targeted users who were overweight or obese young adult females, and experts consisting of psychology academicians and registered counsellors with more than five years of ACT practice. Findings from the analysis phase informed the design and development of an ACT-based bibliotherapy prototype, which subsequently underwent formative evaluation for validity, practicality, and effectiveness. In terms of practicality, participants were able to comprehend the content of the self-help book due to the clear explanation of concepts, supported by the use of analogies and examples. The relatability of the content further helped readers to connect with and understand the underlying concepts. Six motivational themes emerged as factors that encouraged participants to complete reading the book: (1) values, goal setting, and self-monitoring; (2) relatability and personal challenges; (3) information, knowledge, and insight; (4) activities that facilitated concept mastery; (5) engaging reading experience; and (6) self-improvement and change. In terms of effectiveness, all participants demonstrated improved psychological flexibility, as evidenced by the reduction in post-intervention AAQ-W scores and reported positive changes in their eating behaviour. The final prototype, a psychoeducational self-help book titled *“Making Peace with Diet,”* was therefore found to be both practical and effective in enhancing psychological flexibility to promote sustained dietary behaviour change. This study contributes to the field by proposing design principles that serve as a framework for counsellors who act as instructional designers in developing ACT-based self-help interventions aimed at fostering sustainable health behaviour change within the Malaysian context.

**Keywords:** Acceptance and Commitment Therapy, Design and Development Research, ADDIE, bibliotherapy, sustained dietary behaviour change, psychoeducational module.

## ملخص البحث

يستمر انتشار زيادة الوزن والسمنة في الارتفاع عالمياً، بما في ذلك في ماليزيا. غالباً ما، تُحقق استراتيجيات إدارة الوزن التقليدية، التي تُركز بشكل أساسي على النظام الغذائي وممارسة الرياضة، نجاحاً قصير المدى، لكنها تفشل في الحفاظ على سلوك غذائي صحي على المدى الطويل. هدفت هذه الدراسة إلى تسخير القيم الإنسانية كمحددات للتغيير المُستدام في السلوك الغذائي من خلال إطار عمل العلاج بالقبول والالتزام ( *Acceptance and Commitment Therapy-ACT* ). باتباع نموذج بحثي نوعي من التصميم والتطوير ( *Design and Development Research-DDR* ) من النوع الأول، مسترشداً بنموذج *ADDIE*، تقدمت الدراسة بشكل منهجي عبر مراحل التحليل والتصميم والتطوير. استُخدمت مناهج متعددة، بما في ذلك المقابلات شبه المنظمة، وتحليل الوثائق، وتدوين المذكرات التأملية، والتقييم النفسي باستخدام استبيان القبول والالتزام - الوزن ( *Acceptance and Action Questionnaire-Weight - AAQ-W* ). شملت الدراسة مجموعتين، ضمنا 14 مشاركاً: مستخدمات مُستهدفات من الشابات البالغات اللاتي يُعانين من زيادة الوزن أو السمنة، وخبراء من أكاديميين في علم النفس ومستشارين مُسجلين لديهم أكثر من خمس سنوات من الخبرة في العلاج بالقبول والالتزام. استُرشد في تصميم نموذج أولي للعلاج وتطويره بالكتب قائم على *ACT*، والذي خضع لاحقاً لتقييم تكويني للتحقق من صحته وعملياته وفعالته. أما من حيث التطبيق العملي، فتمكن المشاركون من فهم محتوى كتاب المساعدة الذاتية بفضل الشرح الواضح للمفاهيم، مدعوماً باستخدام التشبيهات والأمثلة. كما ساعد ارتباط المحتوى بالقراء على التواصل مع المفاهيم الأساسية وفهمها. برزت ستة محاور تحفيزية كعوامل شجعت المشاركين على إكمال قراءة الكتاب: (1) القيم، وتحديد الأهداف، ومراقبة الذات؛ (2) الارتباط بالتحديات الشخصية؛ (3) المعلومات والمعرفة والبصيرة؛ (4) الأنشطة التي سهّلت إتقان المفاهيم؛ (5) تجربة قراءة شيقة؛ و(6) تحسين الذات والتغيير. ومن حيث الفعالية، أظهر جميع المشاركون تحسناً في المرونة النفسية، كما يتضح من انخفاض درجات *AAQ-W* بعد

التدخل، وأبلغوا عن تغييرات إيجابية في سلوكهم الغذائي. لذلك، وُجد أنّ النموذج الأولي النهائي، وهو كتاب مساعدة ذاتية تعليمي نفسي بعنوان "التصالح مع النظام الغذائي"، عملي وفعال في تعزيز المرونة النفسية لتشجيع تغيير مستدام في السلوك الغذائي. تساهم هذه الدراسة في هذا المجال من خلال اقتراح مبادئ تصميمية تُشكل إطارًا للمستشارين الذين يعملون كمصممين تعليميين في تطوير تدخلات مساعدة ذاتية قائمة على العلاج بالقبول والالتزام، بهدف تعزيز تغيير مستدام في السلوك الصحي في السياق الماليزي.

### الكلمات المفتاحية:

العلاج بالقبول والالتزام، بحوث التصميم والتطوير، نموذج *ADDIE*، العلاج بالقراءة (البليوثيرابي)، استدامة التغيير في السلوك الغذائي، وحدة التثقيف النفسي.

## **APPROVAL PAGE**

The dissertation of Ayat binti Ibrahim has been approved by the following:

---

Haniza Rais  
Supervisor

---

Muhammad Sabri Sahrir  
Co-Supervisor

---

Ssekamanya Siraje Abdallah  
Internal Examiner

---

Ahmad Jazimin Jusoh  
External Examiner

---

Azhar Mohd Ibrahim  
Chairman

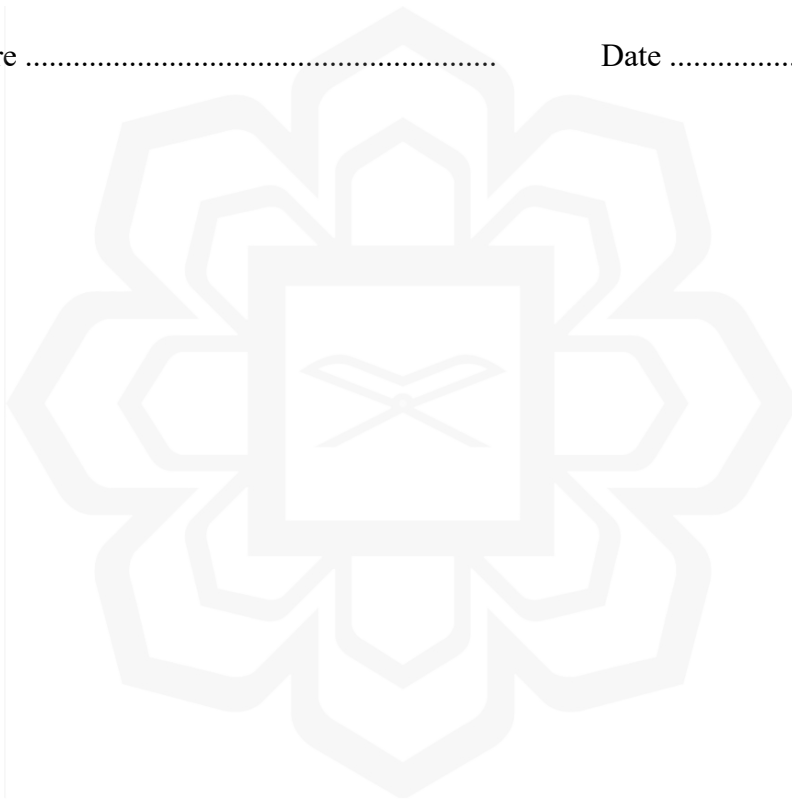
## DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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Signature .....

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*This dissertation is dedicated to:*

*The people of my nation,  
in support of a journey towards health and well-being.*

*Dietitians and nutritionists,  
who intend to empower their clients by incorporating a psychological approach  
as a foundation for lasting dietary behaviour change.*

*Counsellors and clinical psychologists,  
who seek to include counselling for healthy eating behaviours  
as part of their service to others.*

*And to the servants of Allah the Almighty,  
who seek to make eating a form of worship—an act of gratitude,  
and fulfillment of their duties as Muslim believers.*

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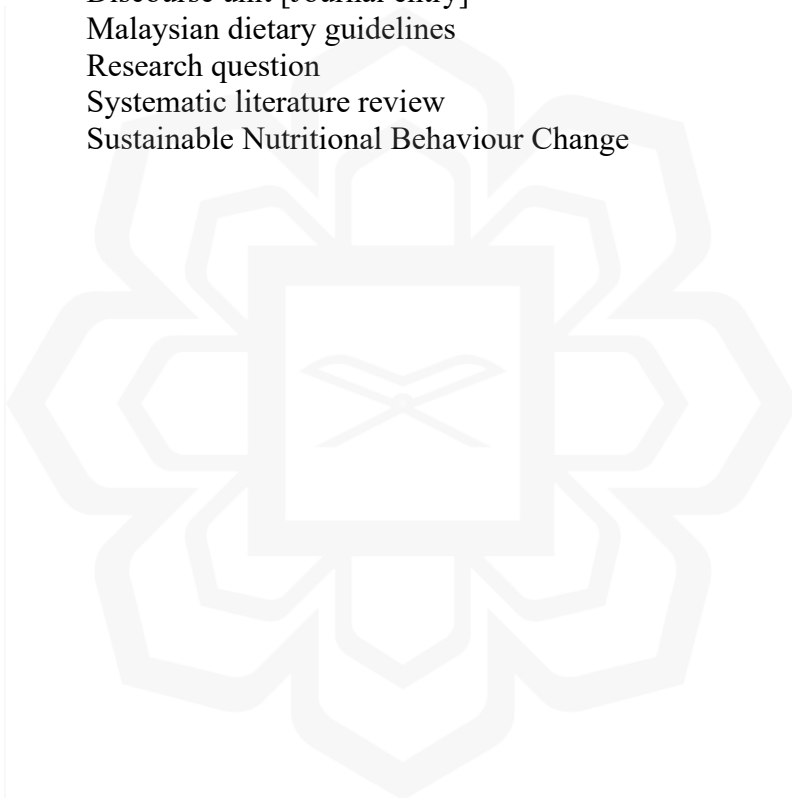
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## LIST OF ABBREVIATIONS

AAQ-W	Acceptance and Action Questionnaire for Weight
ACT	Acceptance and Commitment Therapy
ADDIE	Analysis, Design, Development, Implementation and Evaluation
BCW	Behaviour Change Wheel
BMI	Body Mass Index
COM-B	Capability, Opportunity, Motivation - Behaviour
DDR	Design and Development Research
DU	Discourse unit
DU[I]	Discourse unit [Interview]
DU[J]	Discourse unit [Journal entry]
MDG	Malaysian dietary guidelines
RQ	Research question
SLR	Systematic literature review
SNBC	Sustainable Nutritional Behaviour Change



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 INTRODUCTION**

This chapter introduces the study and establishes its foundation. It begins with the background, which explains the context and rationale for designing and developing a bibliotherapy module in the form of a self-help book, aimed at promoting sustained dietary behaviour change. The statement of the problem follows, outlining the key issues and research gaps that justify the need for this development. The chapter then presents the research objectives and research questions that guide the study, along with definitions of key terms used throughout. The significance of the study is also discussed to highlight its theoretical, practical, and societal contributions. Finally, the chapter outlines the study's delimitations, dissertation organisation and ends with a brief summary that provides a transition to the next chapter.

### **1.2 BACKGROUND**

The prevalence of overweight and obesity constitutes a pressing global public health concern. As of 2022, approximately one in eight people worldwide were living with obesity, demonstrating the vast scope of this epidemic obesity (World Health Organization [WHO], 2025). Over the past decade, Malaysia has witnessed a dramatic increase in the prevalence of overweight and obesity among its adult population. Data from the National Health and Morbidity Survey (NHMS) consistently demonstrates this alarming trend, with the combined prevalence of overweight and obesity rising sharply from 44.5% in 2011 to 54.4% in 2023, an increase of almost 10 percentage points (Institute for Public Health, 2024). Specifically, the prevalence of obesity alone has surged, reaching 21.8% of adults in 2023 (Institute for Public Health, 2024). It is not merely the issue of numbers or size but this excess of fat gives impact to a person's quality of life. In light of this, efforts to modify eating behaviour are

essential, as they are key to not only addressing obesity directly but also to mitigating the broader global burden of non-communicable diseases.

While numerous interventions exist, the central challenge in addressing this crisis remains the sustaining of dietary behaviour change. The existing body of literature is significantly limited by its primary focus on short-term outcomes, such as initial weight loss, rather than the complex, long-term process of maintaining healthy habits (Ogden & Hills, 2008). Consequently, the current knowledge base is inadequate for designing truly enduring strategies, especially since obesity is recognized as a chronic, relapsing condition. Furthermore, a major weakness in many interventions is the failure to address the underlying emotional and cognitive drivers of eating behaviour, which necessitates a psychological transformation for sustained success (Ekman, 2018; Hamer et al., 2024).

This study addresses these gaps by focusing on the design and development of a bibliotherapy module for sustained dietary behaviour change. The intervention is grounded in a holistic framework that integrates three core components. At its philosophical foundation, the study adopts a *tawhidic* epistemology, which forms the basis for understanding eating behaviour, emphasising that knowledge and actions related to food must be grounded in the awareness of divine guidance and accountability to the Creator. At its theoretical framework, the bibliotherapy module is conceptually grounded in Acceptance and Commitment Therapy (ACT), one of the emerging third-wave cognitive behavioural therapies (TWCBTs). ACT is specifically chosen for its efficacy in developing psychological flexibility which refers to the ability to take committed actions aligned with one's values even in the presence of difficult thoughts and emotions. In terms of target population and context, the research aims to provide a contextually relevant solution for individuals, particularly young adults in Malaysia, who struggle with issues such as low self-control and negative emotional states when attempting to maintain a new dietary regimen.

By integrating psychological principles (ACT) with Quranic values, this research seeks to move beyond mere information dissemination and develop a structured, evidence-based self-help module that facilitates the long-term self-regulatory actions required for chronic weight management.

### 1.3 STATEMENT OF PROBLEM

The pervasive difficulty in achieving and maintaining long-term health outcomes necessitates a paradigm shift in how dietary interventions are conceived and delivered. The research is being conducted due to the widespread failure of conventional dietary programmes to achieve sustained dietary behaviour change, with high relapse rates often rendering short-term successes negligible (Khattab, 2024).

This topic is important because the rise in diet-related chronic diseases is not due to a lack of nutrition knowledge, but rather a lack of psychological and environmental support needed to maintain healthy behaviours (Pepe et al., 2023; Tsegaye et al., 2020). The failure to sustain healthy eating habits contributes to recurrent cycles of dieting, psychological distress, and ultimately, poor health trajectories (Li et al., 2024; Nozari, 2018).

What is wrong with the current situation is that the dominant intervention models primarily focus on prescriptive, informational, and restrictive approaches aimed at immediate adherence. These traditional methods neglect the underlying psychological processes that drive long-term habit formation, failing to adequately address the cognitive and emotional barriers (e.g., difficult thoughts and feelings related to food) that undermine sustained effort (Trujillo-Garrido & Santi-Cano, 2022). The failure of weight maintenance after weight loss interventions is often attributed to unsustainable changes in eating behaviour. Current “deficit-based approach” which tries to deal with a person’s weakness such as staying away from craved food is not able to promote sustainable weight loss (Pekkarinen et al., 2015). Another approach which is strength-based approach that focus on building human’s strength, may offer better outcome (Fritz et al., 2019).

Existing solutions largely comprise traditional diet programmes or standard Cognitive-Behavioural Therapy (CBT) modules (Hamer et al., 2024). While these approaches show initial effectiveness, literature review reveals they are frequently criticised for their poor long-term outcomes (Levin et al., 2018), often attributed to their tendency to promote avoidance of internal experiences (thoughts, cravings) rather than acceptance and commitment. Critical review of the exact limitations

identified within the literature highlights three specific and significant gaps that the current research seeks to fill:

1. **Lack of focus on sustained dietary change.** Most interventions are rarely designed explicitly around the principles required for sustained behavioural maintenance.
2. **Under-representation of strength-based approaches.** Current interventions seldom leverage an individual's personal values and strengths, focusing instead on correcting deficits or weaknesses.
3. **Lack of Islamic integration.** There is a critical scarcity of culturally resonant interventions that integrate a Tawhidic Epistemology to align dietary practices with the spiritual and cultural values of Muslim populations.

In the context of module development, these shortcomings often stem from a lack of information gathered during the needs analysis phase, particularly regarding the role of psychological flexibility in sustaining behavioural change. There is, therefore, a need to develop psychoeducational materials that assist individuals in maintaining newly adopted healthy eating habits. A potential solution lies in the development of an accessible, scalable, and psychologically informed self-help intervention that moves beyond mere knowledge transfer towards cultivating psychological flexibility, one of the key determinant of sustained, values-driven behaviour.

The proposed solution is the design and development of a bibliotherapy module for sustained dietary behaviour change. The underlying techniques guiding this design are the evidence-based principles of Acceptance and Commitment Therapy (ACT), which provide the psychological model for enhancing flexibility, and the *Tawhidic* epistemology, which ensures spiritual alignment. This entire process will be systematically conducted using the Design and Development Research (DDR) methodology (Richey & Klein, 2007) to ensure that the resulting module is both theoretically grounded and empirically validated.

## 1.4 RESEARCH OBJECTIVES

This study uses Design and Developmental Research (DDR) approach (Richey & Klein, 2014). It is a systematic study that is based on designing a product to solve a defined issue. The research purpose is to develop a value-based bibliotherapy module using ACT model for sustained dietary behaviour change among overweight and obese women. This module is named “Making peace with diet”. It is developed using Malay language as the targeted readers are Malaysians. There are three objectives from three phases of DDR as the following:

1. Phase 1: Analysis phase

To analyse the needs of developing an ACT-based bibliotherapy module (“Making peace with diet” self-help book) for sustained dietary behaviour change.

2. Phase 2: Design and development phase.

To design and develop a validated ACT-based bibliotherapy module (“Making peace with diet” self-help book) for sustained dietary behaviour change.

3. Phase 3: Evaluation phase.

To evaluate the usability of the developed ACT-based bibliotherapy module (“Making peace with diet” self-help book) for sustained dietary behaviour change.

## 1.5 RESEARCH QUESTION

Based on the three objectives, this study seeks to investigate the following research questions:

Research question 1 (RQ1.0): To what extent developing a “Making peace with diet” self-help book for sustained dietary behaviour change is necessary?

1. RQ 1.1: To what extent the overweight and obese individuals able to sustain dietary behaviour change after participating in previous interventions for weight management?
2. RQ 1.2: What psychological processes are successfully managed by overweight and obese individuals who sustain dietary behaviour change, as documented in the literature review?
3. RQ 1.3: What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?
4. RQ 1.4: What are the specific strategies of Acceptance & Commitment Therapy (ACT) that are used by practitioners in the literature to promote sustained dietary behaviour change?

Research question 2 (RQ2.0): What are the components needed to design and develop an Acceptance & Commitment Therapy (ACT) bibliotherapy module for sustained dietary behaviour change?

1. RQ 2.1: What are the elements needed in designing a self-help book (Making peace with diet) for sustained dietary behaviour change, from the experts?
2. RQ 2.2: How can the psychological flexibility elements identified as necessary by the needs analysis, be incorporated into the module?

Research question 3 (RQ3.0): What is the usability of the developed self-help book?

1. RQ 3.1: What are the practicality of the developed self-help book (Making peace with diet) based on user retrospective and reactions among the participants who attended the 4-week bibliotherapy intervention?
2. RQ 3.2: To what extent does the implementation of self-help book (Making peace with diet) improve participants' state of psychological flexibility to sustain healthy eating behaviour change?

## **1.6 DEFINITION OF TERMS**

### **1.6.1 “Making peace with your diet” self-help book as bibliotherapy module**

The “Making peace with diet” is designed based on Acceptance and Commitment (ACT) hexaflex model (Hayes et al., 2012d) to enhance readers’ psychological flexibility. It is a self-help book comprised of three sections:

1. Introduction to the ACT model.
2. Psychological flexibility components via Triflex.
3. values from the Qur’an and healthy eating guidelines.

### **1.6.2 Values**

In behavioural term, values are “freely chosen, verbally constructed consequences of ongoing, dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioural pattern itself” (Wilson & Dufrene, 2008). In a simpler words, values are how a person is living when he or she is living a meaningful life (LeJeune & Luoma, 2019).

### **1.6.3 Acceptance and commitment therapy (ACT)**

Acceptance and commitment therapy (ACT) is based on a pragmatic philosophy of science called functional contextualism and is connected to relational frame theory (RFT ; Hayes et al., 2012). ACT is a therapeutic model that reduces the impact and influence of painful thoughts and feelings while simultaneously encouraging actions that build a rich, full, and meaningful life (Harris, 2019). The founder introduce the psychological flexibility concept in a form of a hexagon-shaped which represent the six processes namely attention to the present moment; chosen values; committed action; self-as-context; defusion and acceptance (Hayes et al., 2012). These six processes will be introduced to clients in therapeutic session to improve their psychological flexibility.

#### **1.6.4 Contact with present moment**

Contacting the present moment is one of the six core therapeutic processes of ACT. It means paying attention to the physical world around us or psychological world within us flexibly (Harris, 2019). It is a skillful intentional allocation of attention to here and now (Hayes et al., 2012d). It is also termed as mindfulness which involves paying attention with openness, curiosity, kindness and flexibility (Harris, 2019). The ability to be aware and to direct flexible attention to experiences allows an individual to consciously make decisions and choose effective actions in line with their values.

#### **1.6.5 Self-as-context**

Self-as-context is a term to promote a perspective-taking sense of self (Hayes et al., 2012b). It is the part of human that notices self (Harris, 2019) and sometimes labelled as the noticing self or the observing self. It is the part that aware what oneself think, feel, sense and do in any particular moment. The ability to take perspective and stay present is important for protecting oneself from over-extending toxic self-evaluations, mindless rule following and socially supported but self-destructive coping responses (Hayes et al., 2012).

#### **1.6.6 Cognitive defusion**

Fusion happens when an individual unable to discriminate between verbal or cognitive processes and direct experience which narrows an individual's response repertoire (Hayes et al., 2012). When this happens, an individual formulate a symbol of the situation and this further influence him or her to organize their behaviour to fit the demands of the rules being created (Hayes et al., 2012b). To control fusion under context, clients can learn from ACT about how to separate continuous cognitive process from its cognitive products. This concept is termed "cognitive defusion" that means making closer contact with verbal events as they are, not what they say they are. It is an approach of learning to separate ourselves from our thoughts, images and memory (Harris, 2019). The aim is to change the cognitive process functions and further let them under voluntary contextual control (Hayes et al., 2012b).

### **1.6.7 Acceptance / willingness**

In life, when distressing content shows up, people tend to choose escaping, avoiding or attempting to suppress unwanted private event to feel better (Hayes et al., 2012b). This experiential avoidance is a behavioural trap as it impacts people's life. The cost of experiential avoidance include diminishing experiential intelligence, having no opportunity to consider whether or not avoidance is truly desired, and fostering real-life collateral damage by keep avoiding particular actions and situations (Hayes et al., 2012b).

Acceptance is an alternative to avoidance and it is the voluntary adoption of an intentionally open, receptive, flexible and non-judgmental posture with respect to moment-to-moment experience. It is the sense of willingness to make contact with private experiences, events or interactions that are distressing (Hayes et al., 2012b).

### **1.6.8 Clarity of values**

Values are terms to explain how an individual wants to behave on an ongoing basis (Harris, 2019). They aim to guide both overt and covert behaviour and they serve as inspiration, motivation and guidance to assist people do the things that give meaning or purpose in life (Harris, 2019). For most people, the ability to have clarity of values and thus follow a valued direction has been impaired by experiential avoidance and verbal fusion (Hayes et al., 2012b). Thoughts and feelings always bring people to wrong direction. Chosen values on the other hand are stable to serve as compass reading and guide the decision in life (Hayes et al., 2012b).

### **1.6.9 Commitment / committed action**

Taking effective action guided by values is what committed action means (Harris, 2019) . The aim is to turn values into effective overt and covert behaviour (Harris, 2019). The "C" in ACT is "commitment". This acronym express the fundamental importance that ACT places upon behavioural change (Hayes et al., 2012b).

### **1.6.10 Mindfulness**

The four processes mentioned earlier (acceptance, cognitive defusion, flexible attention to the present moment and self-as-context) are termed mindfulness processes (Hayes et al., 2012b). It is a set of psychological skills for effective living with openness, curiosity, kindness and flexibility (Harris, 2019).

### **1.6.11 Dietary behaviour**

The behaviour changes with regards to this study is specifically related to lifestyle modification. This is based on key messages in Malaysian Dietary Guidelines 2020 (National Coordinating Committee on Food and Nutrition (NCCFN), 2021) that include the following:

1. Eat a variety of foods within the recommended servings.
2. Eat plenty of vegetables and fruits everyday.
3. Eat adequate amounts of rice, other cereals, whole grain cereal-based products and tubers.
4. Consume moderate amounts of fish, meat, poultry, egg, legumes and nuts.
5. Reduce intake of foods high in fat and limit saturated fat intake.
6. Choose and prepare foods with less salt, sauces and flavour enhancers.
7. Limit sugar intake in foods and beverages.
8. Drink plenty of water daily.

## **1.7 SIGNIFICANCE OF THE STUDY**

This research contributes to the body of knowledge by formulating design principles for developing an Acceptance and Commitment Therapy (ACT)-based bibliotherapy module that promotes sustained dietary behaviour change, particularly within the context of Malaysians. These design principles integrate counselling theory, the bibliotherapy process, and selected instructional design theories (communication theory and learning theory), offering a comprehensive framework for developing self-help intervention that are both psychologically effective and culturally relevant.

From a practical perspective, the bibliotherapy module developed in this study serves as a psychoeducational resource for counsellors, clinical psychologists, and dietitians, equipping them with structured materials to guide clients in achieving lasting changes in their eating behaviours. It also provides direct benefits to individuals who are overweight or obese, supporting them in cultivating psychological flexibility and sustaining healthier eating habits over time.

## **1.8 DELIMITATION**

1. Readers involved – The readers involved in this study are young adults aged 18-26 years old. They are all overweight or obese and have the intention to change eating behaviour through reading (bibliotherapy).
2. The counselor – The counselor who provide weekly guidance during the implementation phase is a registered counselor with qualification of Master of education (guidance and counselling). The guidance is limited to motivate the participants to continue reading and practise the tasks in self-help book. Only motivational interviewing skills (Open-ended questioning, affirmation, reflection and summarization) are used throughout the sessions.

3. Evaluation of readers' response to the self-help book – The scope of evaluation is limited to the six core processes in ACT hexa-flex model that portray in their dietary behaviour. So, other output variables such as weight loss and blood profile are not the concern of the study.
4. The dietary behaviour changes targeted to be sustained – The dietary behaviour changes to be evaluated is according to Malaysian Dietary Guidelines 2020.

## **1.9 ORGANISATION OF THE DISSERTATION**

This dissertation is organised into seven chapters. Chapter 1 introduces the research issue and phenomenon under investigation. It further elaborates on the problem statement, research objectives, and significance of the study.

Chapter 2 begins by explaining the concepts of eating behaviour in the Qur'an using the keyword *أكل*. This section on *Tawhidic* epistemology provides direction for the dissertation and guides the selection of relevant literature to be reviewed. It also offers insight for determining the content involved in the design and development of the product. Subsequently, this chapter presents the literature and sources that support the development of the study, critically reviewing relevant findings to establish a strong theoretical and conceptual foundation. The theories underpinning the design and development of the value-based bibliotherapy module, such as Acceptance and Commitment Therapy (ACT), communication theory, and learning theory, are discussed in depth. It also raises readers' awareness of the importance of a bibliotherapy module for sustaining dietary behaviour change. This chapter informs the writing of the Introduction (Chapter 1), Methodology (Chapter 3), and Discussion (Chapter 7).

Chapter 3 elaborates on the research methodology adopted in this study. The study integrates the ADDIE model within the Design and Development Research (DDR) framework. Accordingly, this chapter explains in detail the research processes for each phase, including the sub-studies conducted within every DDR phase. It outlines the empirical approaches undertaken to achieve research objectives 1, 2, and 3, thereby guiding the conduct of the study, the findings of which are reported in the following three chapters.

Chapters 4, 5, and 6 present the findings of the study. The DDR comprises three phases: Analysis, Design and Development, and Evaluation. Chapter 4 presents the findings from the Analysis phase, addressing the first research objective. Chapter 5 discusses the findings from the Design and Development phase, corresponding to the second research objective. Chapter 6 presents the findings from the Evaluation phase, which involves the implementation and assessment of the self-help book intervention.

Chapter 7 synthesises the findings from all three DDR phases. It also summarises the research implications, provides recommendations for future research, and draws the overall conclusion of the study.

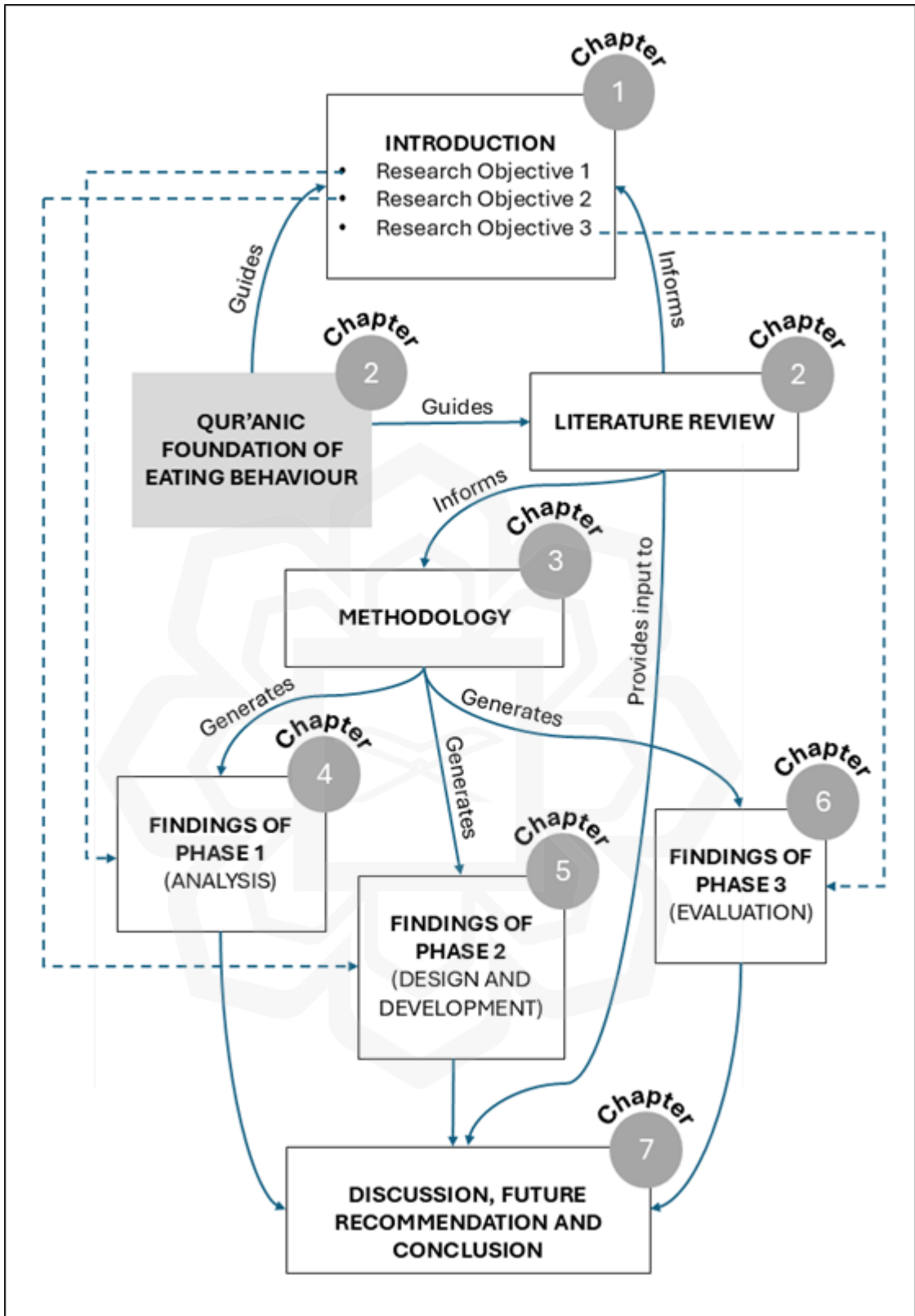


Figure 1.1 Organisation of Dissertation

## 1.10 CHAPTER SUMMARY

This chapter has provided an overview of the study, outlining the background, research problem, objectives, and significance of the research. It highlighted the limitations of conventional dietary interventions that often fail to sustain long-term behaviour change due to the lack of psychological and cultural integration. In response to this gap, the study proposes the design and development of a bibliotherapy module grounded in Acceptance and Commitment Therapy (ACT) and guided by *Tawhidic* epistemology, aiming to foster sustained dietary behaviour change among Malaysian.

The chapter also defined key terms used throughout the research and discussed the study's significance and delimitations. Overall, Chapter 1 establishes the rationale and foundation for the research, setting the stage for the subsequent chapters, with Chapter 2 reviewing relevant literature that informs the theoretical and conceptual framework underpinning the module's design.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1 INTRODUCTION

This chapter begins with an explanation of the fundamental Qur’anic guidance on eating habits, which serves as the foundation for a *tawhidic* epistemology. It then presents an overview and background of the study, outlines the main theme, namely the challenges in sustaining dietary behaviour change, and highlights the focal themes that represent the elements supporting sustained dietary behaviour change. The chapter also discusses the counselling theories underpinning the development of the bibliotherapy module, along with the supporting concepts and the methodology employed. Collectively, these components establish the study’s conceptual framework. Finally, the chapter reviews relevant literature to address the research objectives and questions, which are subsequently synthesised into the research framework.



Figure 2.1 Literature Review Outline

## 2.2 QURANIC FOUNDATIONS OF EATING BEHAVIOUR

This section explores the Qur'anic foundations that underpin the understanding and practice of eating behaviour from an Islamic perspective. The first section discusses the tawhidic epistemology of understanding eating behaviour, emphasising that knowledge and actions related to food and nourishment must be grounded in the awareness of divine guidance and accountability to the Creator. The subsequent section examines the purposes of eating as conveyed in selected Qur'anic verses. This is followed by an analysis of Qur'anic guidance on eating behaviour, which addresses halal, good quality of food choice and moderation. Finally, the chapter discusses factors influencing eating behaviour derived from Qur'anic teachings, shedding light on how spiritual, psychological, and environmental aspects intertwine in shaping human dietary conduct.

### 2.2.1 Tawhidic Epistemology in Understanding Eating Behaviour

The fundamental element of the Muslim ummah's identity is *tawhid*, namely the belief in the Oneness of Allah SWT (Bakar, 2012b). The Prophet Muhammad, as the Messenger of Allah, conveyed the divine revelation (the Qur'an), which constitutes the supreme source of knowledge. This knowledge serves as the foundation for shaping the intellectual framework and worldview of Muslims in affirming their faith in the Oneness of Allah SWT (Qur'an, 11:1-2). The Qur'an functions as a unifying force for individuals, as all forms of human knowledge ultimately derive from Him (Qur'an, 3:103). However, when knowledge is secularised and detached from the perspective of *tawhid*, learners' patterns of thought risk becoming disconnected from the consciousness of Allah's existence (Bakar, 2012a).

The secular epistemology in modern education views each discipline in isolation rather than in unity, and therefore requires integration in order to achieve the best outcomes. The phenomenon of obesity in Malaysia, for example, is primarily addressed by those in the healthcare industry, which is rooted in the pure sciences. Dietitians and nutritionists are trained in nutritional knowledge to educate the nation with the hope that people will make healthier food choices. However, human beings are not merely cognitive in nature; there are many other factors that influence one's

eating behaviour. This is where the input of psychology is required, particularly through counselling, to help individuals make the best possible food choices while navigating their private internal experiences.

In contrast, when this phenomenon is viewed through the lens of *tawhidic* epistemology, one realises the unity of all disciplines of knowledge. God is the Creator of food with all its beneficial nutrients, and He is also the Creator of human beings with all their psychological complexities. Above all, understanding eating behaviour through a *tawhidic* epistemology leads one to make healthier eating choices that serve a higher purpose, not merely to lose weight, which may cause a return to old habits once the weight goal is achieved, but ultimately as an act of worship and an expression of gratitude to the Creator and Provider. This perspective, in turn, encourages the long-term sustainability of healthy eating behaviour.

As Allah is *al-‘Alīm* (The Omniscient), all forms and branches of knowledge are harmoniously interrelated, since all human knowledge ultimately originates from Him (Bakar, 2012b). However, losing the sense of this unity of knowledge due to secular epistemology has led to disunity and conflict within the Muslim mind (Bakar, 2012b). Unhealthy eating behaviour, which contributes to chronic illnesses, can be seen as a form of *fasād* (corruption) arising from the failure to uphold the responsibility of *khalīfah* (vicegerent). The Qur’an recounts the dialogue between the angels and Allah at the appointment of Prophet Adam (a.s.), highlighting that without knowledge taught by Allah, humankind is prone to corruption (Qur’an, 2:30-33). Adam (a.s.) was the first example of *tawhidic* epistemology, as he was directly taught by Allah. In the same way, the ummah of Prophet Muhammad (s.a.w.) is also taught through the Qur’an (Qur’an, 55:1-2). From this perspective, understanding eating behaviour through Qur’anic guidance provides an essential foundation for addressing the contemporary obesity “pandemic.”

### ***2.2.1.1 Methodology of Selecting Verses from the Qur'an***

The root word أكل which means “eat” are selected. Based on <https://corpus.Qur'an.com/Qur'andictionary.jsp?q=Akl> and [http://www.readverse.com/Root\\_search\\_engines/101\\_quran\\_root.php](http://www.readverse.com/Root_search_engines/101_quran_root.php) there are 109 words in the Qur'an that are of root word أكل . These 109 words are from 101 verses in the Qur'an as eight of the verses contain two words of root word أكل .

Table 2.1 illustrates the frequency of verses containing 30 different forms of word for “akala”. The highest of all is اَكُلُوا which is a commandment word translated as “all of you, eat”.



Table 2.1 Analysis on “Akala”, morphological structure and frequency (Translation adapted from Sahih International)

No.	Arabic	Translation	Verse	Frequency
1	أَكَلَ	ate (it)	(5:3)	1
2	أَكَلَا	they both ate	(20:121)	1
3	أَكَلَهُ	it ate him	(12:14); (12:17)	2
4	لَأَكْلُوا	surely they (would have) eaten	(5:66)	1
5	تَأْكُلُ	it (was) eating	(12:36), (32:27), (34:14), (47:12), (7:73), (11:64), (12:41)	7
6	تَأْكُلُهُ	it consumes it	(3:183)	1
7	تَأْكُلُوا	all of you, eat	2(2:188), (3:130), (4:2), (4:29), (6:119), (6:121), 2(24:61), (16:14)	10
8	تَأْكُلُونَ	all of you eat	(3:49), (12:47), (16:5), (23:19), (23:21), (23:33), (35:12), (37:91), (40:79), (43:73), (51:27), (89:19)	12
9	تَأْكُلُوهَا	all of you, eat it	(4:6)	1
10	نَأْكُلُ	we eat	(5:113)	1
11	يَأْكُلُ	he eats	(49:12), (10:24), (23:33), (25:7), (25:8), (4:6)	6
12	يَأْكُلَانِ	both of them eat	(5:75)	1
13	يَأْكُلْنَ	it (will) consume	(12:48)	1
14	يَأْكُلَهُ	it would eat him	(12:13), (69:37)	2
15	يَأْكُلُهُنَّ	it eats them	(12:43), (12:46)	2
16	يَأْكُلُوا	they eat	(15:3), (36:35)	2
17	يَأْكُلُونَ	they consume	(2:174), (2:275), 2(4:10), (21:8), (36:33), (36:72), (9:34), (25:20), (47:12)	10
18	كَلَا	both of you, eat	(7:19), (2:35)	2
19	كُلُوا	all of you, eat	(2:57), (2:60), (2:168), (2:172), (6:141), (6:142), (7:160), (20:54), (20:81), (23:51), (34:15), (52:19), (69:24), (77:43), (77:46), (2:58), (5:4), (6:118), (8:69), (16:114), (22:28), (22:36), (2:187), (5:88), (7:31), (7:161), (67:15)	27
20	كُلُوهُ	all of you, consume it	(4:4)	1
21	كُلِي	you (female), eat.	(16:69), (19:26)	2
22	أَكَلَا	devouring	(89:19)	1
23	أَكْلِهِمْ	their eating	(5:62), (5:63), (4:161)	3

24	لَءَاكُلُونَ	they will surely eat	(37:66), (56:62)	2
25	لِلَّءَاكِلِينَ	for those who eat	(23:20)	1
26	أَكَالُونَ	devourers	(5:42)	1
27	مَأْكُولٍ	eaten up	(105:5)	1
28	أَكْلِ	fruit	(34:16), (13:4)	2
29	أَكْلُهُ	(are) its taste	(6:141)	1
30	أَكْلَهَا	its harvest/ food/ fruit	(2:265), (14:25), (18:33), (13:35)	4
Total				109

All verses were thematically analysed and further categorised according to topics. Table 2.2 shows the frequency of “akala” word according to topic.

Table 2.2 Contextual-frequency analysis of word with root letter أكل

No.	Context/ topic	Chapter and verses	Frequency
1	Command or prohibition related to eating	(2:168), (2:172), (2:187), (5:3), (5:4), (5:88), (6:118), (6:119), (6:121), (6:142), (7:31), (16:114), (20:54), (20:81), (22:28), (22:36), (24:61), (24:61), (67:15)	19
2	Allah’s attributes with regards to provision that human eat	(6:141), (6:141), (16:5), (16:14), (23:19), (23:20), (23:21), (32:27), (35:12), (36:33), (36:35), (36:72), (40:79)	13
3	Consume fire or food in hell	(2:174), (3:183), (4:10), (37:66), (56:52), (69:37)	6
4	Eating in paradise	(43:73), (52:19), (69:24), (77:43)	4
5	Consume wealth or gift or war booty or inheritance	2(2:188), (4:2), (4:4), (4:6), (4:6), (4:10), (4:29), (4:161), (8:69), (9:34), (89:19), (89:19)	13
6	Consume usury	(2:275), (3:130)	2
7	Consume what is unlawful (not specifically about food)	(5:42), (5:62), (5:63)	3

8	Fruit or harvest or produce	(13:4), (13:35), (14:25), (18:33),	4
9	History of prophets (prophet Adam or prophet Musa or prophet Isa or prophet Yusuf or prophet Sulaiman) or previous nation (Bani Israil, disciples of prophet Isa)	(2:35), (2:57), (2:58), (2:60), (3:49), (5:75), (5:113), (7:19), (7:73), (7:160), (7:161), (11:64), (12:13), (12:14), (12:17), (12:36), (12:41), (12:43), (12:46), (12:47), (12:48), (19:26), (20:121), (34:14), (34:15), (34:16), (37:91), (51:27)	28
10	Parables	(2:265), (5:66), (10:24), (49:12), (105:5)	5
11	Sarcasm command to the non-believers	(15:3), (47:12), (47:12), (77:46)	4
12	Character of prophet as human who eat.	(21:8), (23:33), (23:33), (23:51), (25:7), (25:8), (25:20)	7
13	Command to the bee	(16:69)	1
Total			109

### ***2.2.1.2 Qur'anic Concepts Related to Present Study***

To explore Qur'anic concepts relevant to the present study, the following guiding questions were formulated for Qur'anic analysis.

1. What are the purposes of eating as guided by Allah ?
2. What are the Qur'anic guidance on eating?
3. What factors influence human eating behaviour?

Based on the guiding questions, the verses listed in items 3, 4, 5, 6, 7, 10, 11, and 13 of Table 2.2 were excluded as they are not relevant. In total, 38 verses were eliminated, leaving 71 verses to be thematically analysed in relation to the three guiding questions for Qur'anic analysis.

Table 2.3 Final Selection of Verses for the Qur’anic Analysis of Eating Behaviour

No.	Context/ topic	Chapter and Verses	Frequency
1	Command or prohibition related to eating	(2:168), (2:172), (2:187), (5:3), (5:4), (5:88), (6:118), (6:119), (6:121), (6:142), (7:31), (16:114), (20:54), (20:81), (22:28), (22:36), (24:61), (24:61), (67:15)	19
2	Allah’s attributes with regards to provision that human eat	(6:141), (6:141), (16:5), (16:14), (23:19), (23:20), (23:21), (32:27), (35:12), (36:33), (36:35), (36:72), (40:79)	13
3	Fruit or harvest or produce	(13:4), (13:35), (14:25), (18:33)	4
4	History of prophets (prophet Adam or prophet Musa or prophet Isa or prophet Yusuf or prophet Sulaiman) or previous nation (Bani Israil, disciples of prophet Isa)	(2:35), (2:57), (2:58), (2:60), (3:49), (5:75), (5:113), (7:19), (7:73), (7:160), (7:161), (11:64), (12:13), (12:14), (12:17), (12:36), (12:41), (12:43), (12:46), (12:47), (12:48), (19:26), (20:121), (34:14), (34:15), (34:16), (37:91), (51:27)	28
5	Character of prophet as human who eat.	(21:8), (23:33), (23:33), (23:51), (25:7), (25:8), (25:20)	7
Total			71

### 2.2.2 Purposes of Eating

Every action is driven by intention. In Islam, for an action to be considered worship, it must be based on sincere intention and carried out guided by the Qur’an in accordance with the Prophetic tradition. Eating in Islam also serves specific purposes. Based on the final selection of verses to be analysed in Table 2.3, the following verses in Table 2.4 were chosen as they address the guiding question: “What are the purposes of eating in the Qur’an?”

Table 2.4 Purpose of eating based on Qur'anic verses

No.	Themes for purpose of eating	Qur'anic verses
1	To express gratitude	(2:172), (16:114), (22:36), (16:14), (35:12) , (36:35)
2	To avoid extravagance and waste, which Allah dislikes	(7:31), (6:141)
3	To worship Allah which proof of one's belief.	(2:172), (16:114)

### 2.2.2.1 Eating as an Expression of Gratitude

Allah invites mankind to reflect upon the sea, which He has subjected to human beings (Qur'an, 16:14). From it, humans obtain tender meat. The two bodies of water are also not alike: one is sweet and palatable, while the other is salty and bitter (Qur'an, 35:12). Yet through both, Allah provides fresh meat. These marvellous creations of the sea and what lies within them should awaken a sense of gratitude in humankind.

Allah also invites mankind to contemplate large animals, such as camels and cattle, which He has appointed for human benefit by making them tame, so that they can easily be slaughtered (Qur'an, 22:36). As an expression of gratitude, believers are commanded to feed the needy and the beggar (Qur'an, 22:36). Elsewhere, Allah poses a question about gratefulness after calling mankind to reflect upon the fruits they consume (Qur'an, 36:35).

In another verse, Allah directly commands mankind to eat what is *halal* and *tayyib* (pure and wholesome) and to demonstrate gratitude by obeying Him (Qur'an, 2:168, 172). Firstly, being grateful for His provisions means consuming food that is *halal* and *tayyib*. Secondly, it also means that humans should use the energy and nutrients derived from this food in worship of Him, not in acts of disobedience.

#### ***2.2.2.2 Eating as a Means of Attaining Allah's Love***

Allah is the Lord upon whom all creatures depend. Therefore, human beings who are in need of their Lord would certainly wish to preserve their relationship with Him and always seek His pleasure. In matters of food as well, Allah (SWT) issues a warning to those who consider their connection with Him important. He states that He does not like people who are excessive or go beyond limits in eating and drinking (Qur'an, 7:31 ; Qur'an, 6:141). This can be understood directly in terms of the quantity of food consumed. A person should eat moderately and sufficiently, without excess. Otherwise, they risk losing the love of Allah. In addition, these verses also mean that one should not engage in unlawful practices related to food.

#### ***2.2.2.3 Eating as an Act of Worship and Manifestation of Belief***

Commands and prohibitions related to eating began as early as the time of the first man, Prophet Adam (a.s.). He was commanded to eat freely from Paradise except from the forbidden tree, lest he be among the wrongdoers (Qur'an, 2:35; Qur'an, 7:19). From this command and prohibition, we understand that eating is also a form of worship. By obeying His commands and prohibitions, one demonstrates servitude to Allah SWT. Moving forward to the present generation, as the *ummah* of Prophet Muhammad (SAW), we are commanded to eat what is *halal* and *tayyib* (Qur'an, 2:168), while being forbidden from excess (Qur'an, 7:31). Allah SWT mentions in several verses that eating in accordance with His guidance is proof of one's true worship of Him (Qur'an, 2:172; Qur'an, 16:114). Thus, a believer who submits to Him should obey by eating what is *halal* and good, without excess.

### **2.2.3 Quranic Guidance on Eating Behaviour**

With regard to eating, the Qur'an provides at least three forms of guidance. Muslims are required to: (1) consume *halal* (lawful) food, (2) consume *tayyib* (good, wholesome) food, and (3) avoid extravagance in eating. The first two emphasize the quality of food, while the third refers to its quantity.

Table 2.5 Guidance on Eating Behaviour Based on Qur’anic Verses

No.	Themes for Guidance on Eating Behaviour	Qur’anic verses
1	To eat food that is lawful (halal), avoid prohibited food.	(2:168), (5:3), (5:4), (5:88), (6:118), (6:119), (6:121), (16:114)
2	To eat food that is good	(2:168), (2:172), (5:88), (16:114), (20:81), (23:51)
3	Do not eat excessively	(7:31), (6:141)

### 2.2.3.1 Eat Halal Food

In several verses of the Qur’an, Allah SWT commands Muslims to eat halal food (Qur’an, 2:168 ; Qur’an, 5:88 ; Qur’an, 16:114). The things that Allah has created for human use are permissible unless stated otherwise by explicit references in the Qur’an and the Sunnah (Al-Qaradawi, 2007). Hence, the command to eat halal food also includes the obligation to avoid the prohibited food.

In the context of the command to eat, several verses connect the injunction to consume what is halal with the prohibition against following the steps of Satan and with the call to be God-conscious (Qur’an, 2:168; Qur’an, 6:121; Qur’an, 5:88). In other verses, the command to eat what is halal is further linked with the command to show gratitude (Qur’an, 16:114).

### 2.2.3.2 Eat Tayyib Food

According to Ibn Manẓūr (as cited in Amiratul Munirah & Zulaipa, 2020), *tayyib* refers to that which is good, pure, and uncontaminated. It also conveys the meaning of being *halal*, beneficial to the human body, and not harmful to the human mind and soul (Ibn Kathīr, 2016, as cited in Amiratul Munirah & Zulaipa, 2020)

In the Qur'an, it can be observed that some verses pair the command to eat what is *halal* with that of eating what is *tayyib*. However, there are also verses that specifically command the consumption of *tayyib* food without mentioning *halal*. For example, in *Surah al-Baqarah* verse 172, the command begins with an address to the believers and focuses solely on the instruction to eat what is *tayyib*. This differs from verse 168 of the same surah, where after addressing mankind, Allah SWT commands them to eat what is both *halal* and *tayyib*. One reflection we may draw in relation to the reality of the Muslim community is that believers generally strive to seek halal food, but find it more challenging to consistently consume what is good and wholesome. The command in verse 172, which is directed to the believers, highlights this challenge, namely, the need to make healthy eating a habitual practice.

#### **2.2.3.3 Do not Eat Excessively**

There are two verses in the Qur'an that mention the prohibition against eating excessively. In *Surah al-A'raf*, verse 31, Allah commands mankind to eat and drink but not to be excessive. This verse begins with an address to the 'Children of Adam,' inviting the readers of the Qur'an to reflect on the history of Adam in relation to the tactics of Iblīs in causing disobedience to God. Just as Prophet Adam (a.s.) was deceived by Iblīs, so too must the children of Adam take precaution not to fall into the same deception.

Another verse can be found in *Surah al-An'ām*, verse 141. In this verse, Allah introduces Himself as the Creator and Provider of all living beings. Reflection upon this verse should cultivate a sense of gratitude towards the Creator and Sustainer. The verse instructs humankind to eat from what has been provided but not to be excessive. It further warns the readers by stating that Allah does not like those who commit excess. Consequently, those who value the love of Allah SWT would not dare to disobey, as doing so may result in losing His love.

## 2.2.4 Factors Influencing Eating Behaviour

In making decisions about eating, humans can be influenced by many factors. For example, emotional factors such as sadness and stress may drive a person to prefer fatty and sweet foods. In addition, the availability of food can also affect food choices. In this section, the researcher seeks to gather Qur'anic verses (based on Table 2.3) that provide guidance on the factors that may influence humans when making food choices.

The researcher identified four themes related to the factors influencing human food choices. The first is reflecting on food as a means to know God and cultivate values, the second is the capacity to endure internal discomfort, the third is temptation management through stimulus control and lastly is the influence of satanic insinuations.

Table 2.6 Factors Influencing Eating Behaviour Based on Qur'anic Verses

No.	Themes for Factors Influencing Eating Behaviour	Qur'anic verses
1	Reflecting on food as a means to recognize God and cultivate values	(6:141), (13:4), (16:5), (16:14), (18:33), (20:54), (22:36), (23:19), (23:20), (23:21), (32:27), (35:12), (36:33), (36:35), (36:72), (40:79), (67:15)
2	Temptation management through stimulus control	(2:35)
3	The capacity to endure internal state	(2:187)
4	Influence of satanic insinuations	(20:121)

#### ***2.2.4.1 Reflecting on Food as a Means to Recognize God and Cultivate Values***

From the final selection of verses (see Table 2.3), when addressing the question “What factors influence human eating behaviour?”, the theme “Reflecting on food as a means to recognise God and cultivate values” frequently emerges. Two subthemes are identified under this theme: (1) recognising the names and attributes of Allah, and (2) nurturing values through reflection on food.

Several verses highlight the direct acts of Allah in controlling and managing the universe (for example, refer to Qur’an, 6:141, Qur’an, 16:5, Qur’an, 23:19). This stands in contrast to secular epistemology, which attributes agency to creation itself and disconnects phenomena from God. For instance, in modern scientific study, rainfall is explained as the result of clouds carrying water and the movement of wind. In the Qur’an, however, it is explicitly stated that it is Allah who causes the rain to fall through the clouds and wind.

Another example can be seen in the case of milk production. In science classes, we are taught that it is the cattle that produce milk for human consumption. In the Qur’an, however, Allah specifically highlights His attribute as the one who provides mankind with milk through cattle (Quran, 23:21). Secular epistemology, by attributing such blessings solely to creation as if it were the ultimate agent, restricts the cultivation of gratitude to God. Instead of directing thankfulness to the Creator, it credits the creation.

The oneness of God is the central principle in Islam. Through reflection on our food sources, we can come to understand this divine attribute. There are several verses in the Qur’an that invite people to reflect on the food they eat. For example, in Surah ‘*Abasa*, Allah calls upon humankind to contemplate the food they consume.

Translation of the Quran,

Then let man look at his food, We pour forth water in abundance, And  
We split the earth in clefts, And We cause therein the grain to grow,  
And grapes and clover plants (i.e. green fodder for the cattle), And  
olives and date-palms, And gardens, dense with many trees, And fruits  
and herbage. (To be) a provision and benefit for you and your cattle.

The Qur'anic verses above affirm the oneness of Allah by directing attention to food and its processes. The earth and plants require specific amounts and types of water to survive. Similarly, cattle, with their complex creation of a four-compartment stomach, require particular types of grass that can be digested. Thus, the One who created the water must also be the One who created the plants and the cattle. Since every cell and organism requires compatibility with others, this interdependence serves as clear evidence that every living beings are created by the One God.

Allah SWT connects the act of reflecting on His signs in food to the formation of values, particularly gratitude (see Qur'an 36:35; Qur'an, 16:14). If humankind were to take the time to contemplate the greatness of His signs as the Creator and Provider of food, it would be incumbent upon them to feel grateful to the Lord who has bestowed countless blessings. Such reflection nurtures values that, in turn, guide behaviour. Values-driven behaviour is a powerful skill that can influence one's choice of *tayyib* food (Qur'an 2:172). In the obesogenic environment of Malaysia, where food is available 24 hours a day and much of it is unhealthy, curbing cravings is not an easy task. Only with strong values (such as faith and a sense of gratitude), can a person consistently choose value-based behaviours over emotional eating.

#### ***2.2.4.2 Temptation Management through Stimulus Control***

Through the story of Prophet Adam, we learn about the nature of humankind. Allah, the Creator of mankind, knows human weaknesses. In His wisdom, He prohibited Prophet Adam and his wife from approaching the forbidden tree in Paradise (Qur'an, 2: 35). Upon reflection, Allah did not say "Do not eat this fruit," but rather, He said "Do not come near this tree." From this, we learn the guidance to close all paths that lead towards prohibited objects as a way to do self-control.

In psychology, this concept is known as stimulus control. It is a technique used in behavioural therapy that teaches individuals to manage their environment to reduce the likelihood of choosing inappropriate foods. For example, one may refrain from stocking sweets or foods that are high in calories but low in nutrients in the kitchen, following the principle of "out of sight, out of mind."

#### ***2.2.4.3 The Capacity to Endure Internal State***

Appetite and sexual desire are two natural human needs that also exist in animals. The difference between humans and animals is that humans have reason to control these desires, and there are rules of the *Shariah* to ensure they do not exceed limits. Specifically for Muslims, every year, believers train themselves to restrain these desires, including even from what is normally lawful, during the month of Ramadan (Qur'an, 2 : 187). This is because all believers are commanded to refrain from eating, drinking, marital relations, and all prohibited acts from dawn until sunset.

During Ramadan, hunger and thirst may cause discomfort, such as fatigue. However, believers are taught to make peace with this inner discomfort and not attempt to remove it by breaking the fast through eating or drinking. This is an important skill that makes a person realise that when they have a clear value, such as wanting to demonstrate their faith through the act of fasting, they are able to overcome their desires even in uncomfortable situations. It also creates awareness that human beings are capable of acting contrary to the demands of their desires, choosing instead actions that fulfil higher, purposeful goals.

#### ***2.2.4.4 Influence of Satanic Insinuations***

In the Qur'an, the very first command to eat in human history was the command given to Prophet Adam (peace be upon him) and Eve. Allah Almighty instructed Adam to bring his wife into Paradise and eat freely from whatever they wished, except for one forbidden tree. Only a single tree was prohibited for them to approach. It was this prohibition that *Iblis* sought to exploit in his attempt to mislead Adam and Eve.

Satan persistently whispered invitations to disobedience to Adam and Hawwa with craftiness and deceit, a strategy that eventually resulted in Adam's fall. The Qur'an records two of these whispers, which help us understand the nature of Satan's schemes:

Translation of the Qur'an,

But Satan whispered to them to make apparent to them that which was concealed from them of their private parts. He said, "Your Lord did not forbid you this tree except that you become angels or become of the immortal." (Qur'an, 7 : 20)

Then Satan whispered to him; he said, "O Adam, shall I direct you to the tree of eternity and possession that will not deteriorate?" (Qur'an, 20 : 120)

From these recorded satanic whispers, it can be understood that they are very subtle. Satan did not explicitly instruct Adam and Eve to disobey Allah; rather, he introduced various reasons, apparent benefits, and justifications to influence human choice towards violating the divine command. The challenge lies in the fact that these whispers can be perceived by human beings, while Satan himself remains unseen. In the account of Prophet Adam in *Surah al-A'raf*, Allah explicitly states that Satan is able to see human beings whereas they cannot see him (Qur'an, 7 : 27). He whispers into the hearts of mankind even without any invitation.

Hence, the ability to be conscious of the presence of such whispers within the human breast is of significant importance when making decisions related to eating. For instance, when certain thoughts or justifications arise that discourage the consumption of what is halal and tayyib, one should first recognise the presence of these whispers. Subsequently, it is essential to seek protection from Allah, in accordance with His guidance to supplicate for refuge from satanic whispers.

Translation of the Qur'an,

And if an evil suggestion comes to you from Satan, then seek refuge in Allah. Indeed, He is Hearing and Knowing. Indeed, those who fear Allah – when an impulse touches them from Satan, they remember [Him] and at once they have insight. But their brothers - the devils increase them in error; then they do not stop short. (Quran, 7: 200-202)

From the story of Adam, Eve, and Satan, we learn that satanic whispers manifest in the form of thoughts within the human self, appearing almost like one's own inner counsel. We also learn that the method of dealing with such whispers is to create distance from these thoughts by seeking refuge in Allah. One must retain the authority to make decisions and not surrender it to satanic whispers. Furthermore, it is essential to remember Allah's reminders. Through these divine reminders, human beings are able to uphold taqwa and consequently make choices upon the straight path, particularly in selecting food that is halal and tayyib, and in avoiding excessiveness in eating.

#### **2.2.5 Qur'anic Concepts Underpinning the Module for Sustained Dietary Behaviour Change**

In developing a bibliotherapy module for dietary behaviour change, it is necessary to establish objectives that align with the commands and prohibitions in the Qur'an namely, to consume what is halal and tayyib, and to avoid excessiveness in eating. When making food-related choices while striving to remain on the straight path as guided by the Qur'an, human beings face inner challenges such as emotions, thoughts, bodily sensations, and even satanic whispers. These challenges can be addressed in several ways. First, by cultivating clarity of values such as gratitude, love for Allah, and the importance of demonstrating faith and servitude through the act of eating. Second, by developing the ability to manage internal experiences, for instance through the self-regulatory skills cultivated during fasting in the month of Ramadan. Third, by distancing oneself from prohibitions by stimulus control. Lastly, by maintaining awareness of satanic whispers and seeking refuge in Allah to avoid being deceived.

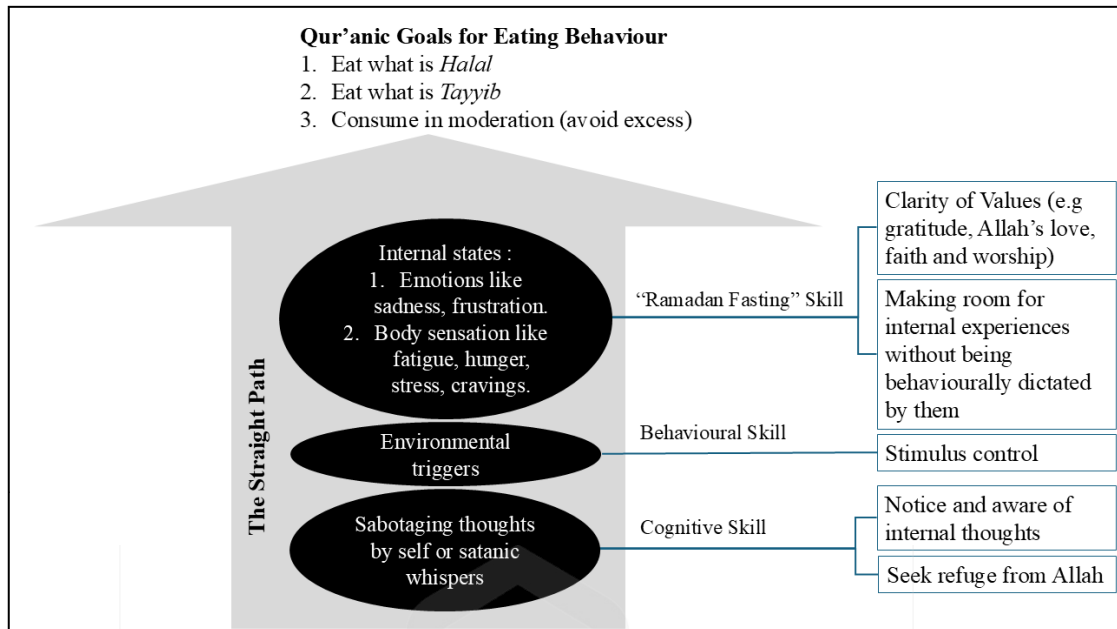


Figure 2.2 Qur'anic Concepts Underpinning the Dietary Behavioural Change Module

In summary, this section has presented the analysis of selected Qur'anic verses containing the word *akala* (to eat), in response to the following research questions:

1. What are the purposes of eating as guided by Allah?
2. What are the Qur'anic guidance related to eating?
3. What are the factors that influence human eating behaviour?

The findings were organised thematically and discussed within their respective sections to highlight the divine principles governing human dietary conduct. Grounded in a tawhidic epistemology, the analysis revealed that eating behaviour, as guided by the Qur'an, extends beyond physical nourishment to encompass spiritual consciousness, moral responsibility, and self-regulation. Drawing upon these insights, a Qur'anic framework to guide eating behaviour was developed, providing the conceptual foundation that informs the subsequent stages of this study.

## **2.3 OVERVIEW AND BACKGROUND OF THE STUDY**

This section reviews the literature on the global issues of unhealthy eating behaviour and obesity, examines the current interventions specifically on educational module that have been implemented to address unhealthy eating and finally modules used as interventions undertaken in Malaysia to combat this problem.

### **2.3.1 Obesity: Its Implications and Dietary Behavioural Risk Factor**

Overweight and obesity constitute pressing global public health concerns. As of 2022, one in eight people worldwide were living with obesity (World Health Organization [WHO], 2025). In the latest statistics, China recorded the highest number of adults living with overweight and obesity, estimated at 402 million, followed by India with 180 million and the United States with 172 million (Marie et al., 2025). The North Africa and Middle East super-region recorded the rapid rise in obesity prevalence (Marie et al., 2025).

A high body mass index (BMI) has become a critical public health concern, as it is recognised as one of the major risk factors for non-communicable diseases (Amlaev & Alnizami, 2025) such as heart disease (Usmanov et al., 2022), hypertension, diabetes and certain types cancers (Al-Omar et al., 2024; Bovet et al., 2023). The complications associated with it lead to higher rates of illness, death, and significant financial costs (Alqahtani et al., 2023). Moreover, maternal obesity prior to pregnancy has been linked to a higher risk of impaired motor development in infants (Lackovic et al., 2024).

Dietary behaviour is one of the risk factors contributing to the rising prevalence of obesity, particularly among young adults. Obesity among young adults in Saudi Arabia is influenced by unhealthy eating habits such as high consumption of ultra-processed food, low levels of physical activity, and inadequate sleep (Alomari & Almoraie, 2025; Seyam, 2025). Similarly, a study conducted in China among children found that a higher frequency of eating at restaurants was associated with an increased risk of obesity (Chen et al., 2022). In Indonesia, skipping breakfast, frequent snacking,

and consuming a high-calorie diet were closely linked to obesity among college students (Kok et al., 2023).

An obesogenic environment significantly influences dietary behaviour. For instance, the continuous availability and easy accessibility of ultra-processed foods and sugar-sweetened beverages which often sold at relatively low prices, encourage their frequent purchase and consumption (Bovet et al., 2023). In India, the obesogenic environment is being reinforced by the widespread promotion of junk foods through advertisements, misleading food labelling, and the growing influence of food delivery applications (Anwar et al., 2024). At the policy level, there is an established need to change the food environment to prevent obesity (McKenzie et al., 2024). However, before this can become a reality, individuals need to be equipped with the skills to resist the temptation of highly palatable foods with little or no nutritional value.

Addressing this challenge requires the urgent identification and implementation of effective interventions in order to mitigate the global disease burden (Brauer et al., 2024). In this regard, efforts to modify eating behaviour are essential, as they not only address obesity directly but also contribute to reducing the broader burden of non-communicable diseases. The intervention should take into account both internal human experiences (emotions, thoughts, bodily sensations, etc.) and external experiences (the obesogenic environment) to enable individuals to make healthy eating choices. The failure of a module to consider all these aspects results in healthy eating habits that are not sustained for long.

### **2.3.2 Current Educational Modules Promoting Dietary Behaviour Change for Weight Loss**

There are numerous benefits to promoting weight loss among overweight and obese populations. It is estimated that if one million individuals with obesity each achieved a 15% weight loss, the resulting reduction in obesity-related complications could lead to substantial cost savings of more than 200 million US dollars (Alqahtani et al., 2023; Toliver et al., 2024). Furthermore, reducing or halting the increase in obesity prevalence by 10%–50% could result in a 33.0%–51.3% decline in the prevalence of type 2 diabetes mellitus (Alareeki et al., 2024).

Targeted interventions that focus on improving dietary habits, increasing physical activity, and reducing sedentary behaviour can help prevent and manage overweight and obesity (Aden et al., 2024). In general, current obesity management involves supporting behavioural change through lifestyle education and adjunctive therapies such as pharmacological and surgical interventions (Bovet et al., 2023). Zooming into educational modules designed to promote weight loss, there are generally two types of programmes. The first focuses on addressing the question “What to eat”, while the second emphasises “How to make the right food choices.” The former involves educating individuals about diet, the benefits of nutrients, and guidance on what to eat and what to avoid. In contrast, the latter employs behavioural strategies grounded in counselling theories, where individuals are trained to manage their emotions, thoughts, bodily sensations, and environmental triggers in order to make healthier food choices.

Under the first type of module that educates the public about “what to eat,” there are various types of diets, such as low-calorie diets, low-fat diets, low carbohydrate diet, the Mediterranean diet, and many others (Lee, 2023). Popular diet approaches that restrict carbohydrates (e.g., Atkins), calories (e.g., Weight Watchers), or fats (e.g., Ornish) have been shown to be effective for weight loss, although with varying outcomes (Dansinger et al., 2005). Continuous nutrition education comprising 28 sessions per year has also been found to result in sustained weight loss over 12 months when using energy-restricted, nutrient-dense diets (Psota et al., 2020). Overall, low calorie diets appear to be among the most effective strategies for achieving significant weight loss (Olateju et al., 2023).

The second type of module that educates the public about “how to make the right food choices” is usually referred to as a behavioural strategies or psychological intervention, which is grounded in psychological theories and delivered through counselling sessions or psychoeducational sessions. In contrast to the first type, which can be delivered by individuals with nutritional knowledge (e.g., teachers, dietitians, or health coaches), this type of module can only be delivered by trained clinical psychologists or counsellors. Common behavioural strategies include goal setting, self monitoring and problem solving (Okorodudu et al., 2015 ; Perperidi et al., 2023). In addition, reinforcement helps sustain newly adopted healthy eating behaviours by

using rewards to maintain motivation (Cha et al., 2025). Cognitive restructuring assists in changing negative thought patterns that hinder appropriate eating behaviours (Cha et al., 2025). Mindfulness and acceptance, on the other hand, enhance awareness and acceptance of internal private experiences so that these experiences do not dictate outward behaviour (Jones et al., 2025). Finally, motivation can be enhanced by exploring ambivalence, while clarification of values helps align eating behaviours with one's chosen values (Hamer et al., 2024).

### **2.3.3 Strategies Used to Combat Obesity in Malaysia**

The Ministry of Health Malaysia had been conducting intervention in collaboration with Ministry of Education and Ministry of Higher Learning Education to combat obesity. Specifically, in higher learning education, a program named "Program Siswa Sihat" (PROSIS – Healthy Students Programme) was launched in 2011 ((Bahagian Pendidikan Kesihatan Kementerian Kesihatan Malaysia, 2012). This program optimises the students themselves as initiator to behavioural changes campaign using the peer counsellor's concept.

The literature provided at least four previous studies in Malaysia focusing on intervention in higher learning institution among young adults. Two main variables as elements of intervention were diet (Wan Ali Munawar et al., 2020) and physical activity (Kok et al., 2018). Earlier study tested effectiveness of multimodal nutrition education among university students which combined both elements of diet and physical activity (Shahril et al., 2013). All findings gave significant result to losing weight as compared to the control group. There was a significant difference between walking steps and body-mass index (BMI) before and after intervention among participants of the case group (Kok et al., 2018). Nik Yahya et al. (2019) also reported better outcomes for BMI, waist circumference and body fat percentage among participants in the exercise simulation-based group. One study developed a module (0.85 Cronbach's alpha validity index and 0.95 module reliability index) to promote healthy lifestyle among female students in higher education institution using psychological approaches namely Cognitive Behaviour Therapy and mindfulness (Mohd Said et al., 2017). So far, Mohd Said (2017) work is the only study that look

from the perspective of behavioural therapy via counselling intervention. All other studies focus on diet and physical activity.

Do having adequate information about healthy eating will result in behavioural changes and make it a long lasting habit? Malaysia's study proves that acquiring knowledge about healthy eating does not necessarily convert to behaviour or practices. People already aware of what food they are supposed to take for example Hassan et al. (2015) found that 74% of respondents have good knowledge about Malaysian Dietary Guidelines, however only 22% of them were practising it. Another study among university students revealed that half of the respondents (51.7%) have poor knowledge about sugar-sweetened beverages and majority (80.7%) have poor practice level (Cheah & Chua, 2023). Even though 82.7% of the respondents have knowledge about healthy living, but there were still high prevalence of salt intake (83.2%), fat intakes (81.4%) and low fibre intake (70.3%) among young adults in Malaysia (Siew-Keah et al., 2022). Hence, factors other than knowledge and awareness should be considered in developing a module for sustained dietary behaviour change. Incorporating psychotherapeutic techniques into integrative obesity interventions is recommended to promote cognitive change and enhance tolerance to frustration (Ostojic et al., 2024).

## **2.4 LITERATURE LIMITATIONS**

Despite extensive research on dietary behaviour interventions, several important gaps remain in the existing body of literature. First, most studies prioritise short-term outcomes such as weight loss rather than long-term maintenance, resulting in limited understanding of how to sustain healthy eating behaviours. Second, few empirical studies have explored module design grounded in strength-based approaches that build on individuals' psychological resources. Third, there is a notable lack of integration between psychological principles and Quranic values in developing intervention modules for dietary behaviour change. These limitations highlight the need for a more holistic and contextually relevant approach that bridges behavioural science with Islamic perspectives.

### **2.4.1 Lack of Interventions Targeting Sustained Dietary Behaviour Change**

The existing body of literature on sustained dietary behavior change, presents limitations that converge on a critical need for structured educational interventions. The main weakness in existing research is its focus on short-term weight loss, rather than the complex and long-term process of maintaining it (Ogden & Hills, 2008). This focus has limited understanding of which specific features of behavioural programmes affect weight change after the formal intervention ends (Hartmann-Boyce et al., 2021). As obesity is recognized as a chronic, relapsing condition (Wadden et al., 2020), the current knowledge base is inadequate for designing effective, enduring strategies.

Furthermore, a crucial research gap lies in the psychological and theoretical depth of existing interventions. The prevailing weight-centered approach often fails because it neglects the underlying emotional and cognitive drivers of eating behavior (Ekman, 2018; Hamer et al., 2024). Individuals often resort to overeating as a coping mechanism, leading to the perception that fatness is a symptom of an unaddressed "real" problem (Ekman, 2018). This is evidenced in specific populations, where variables like emotional food cravings predict poor short-term outcomes even after bariatric surgery (Janse Van Vuuren et al., 2018). Sustained change requires a psychological transformation, involving a redefinition of one's identity and the development of a "new, healthier self." (Ogden & Hills, 2008), which traditional prescriptive education rarely achieves.

Finally, the lack of context-specific models is a limitation, particularly for diverse populations, such as adults from Saudi Arabia (Gosadi, 2025) or individuals maintaining weight loss after severe obesity (Natvik et al., 2019). The generalizability of current findings is therefore compromised.

This collective review of limitations such as the focus on short-term results, the failure to address psychological relapse drivers, and the lack of contextual depth, clearly establishes the need for a targeted, theory-driven, and contextually relevant intervention. Therefore, there is a clear need to develop and assess an educational module that supports lasting dietary behaviour change. This module must move beyond simple information dissemination, instead focusing on integrating psychological skills into a structured, evidence-based format designed to facilitate the

long-term, self-regulatory actions required for chronic weight management (Hamer et al., 2024; Palmeira et al., 2023).

#### **2.4.2 Lack of Empirical Studies on Module Design for Strength-based Dietary Behaviour Change Interventions**

The persistent challenge of achieving and maintaining long-term weight loss highlights a critical limitation in the current literature: an over-reliance on the deficit paradigm of traditional behavioral and medical interventions (Hamer et al., 2024; Wadden et al., 2020). This deficiency-based framework, which focuses primarily on controlling negative behaviors, has led to a significant research gap by neglecting the potential of strength-based psychological models (Robertson et al., 2017). Consequently, there is a clear and pressing need to explore and integrate a strength-based approach into weight management interventions.

The existing gaps cluster around three key themes. First, the lack of focus on positive psychological factors means that less is known about the enduring strengths such as flourishing, gratitude, and positive affect, that successful maintainers employ (Feig et al., 2019; Robertson et al., 2017). Moving beyond correcting "bad habits" to identifying and building on a person's inherent strengths is essential for promoting sustained self-regulation.

Second, there is a gap between research and real-world practice. While positive psychology interventions have demonstrated benefits in reducing negative outcomes like weight bias internalization (Dunaev et al., 2018) and increasing body compassion (Dennis & Ogden, 2024), surprisingly little research has experimentally investigated the capacity of these tools to motivate specific healthy eating behaviors (Fritz et al., 2019). Studies that do test positive psychology interventions, such as the comparison of gratitude-based interventions with traditional cognitive restructuring for body dissatisfaction (Wolfe & Patterson, 2017), highlight the need for more direct comparative research. Their systematic, rigorous application as a core strategy for weight loss or maintenance is infrequent (Feig et al., 2019). This gap is significant because the potential of strength-based approaches to create lasting behavioral change

through a sense of empowerment remains largely untested in clinical weight management.

Finally, the ambiguity of specific mechanisms requires greater clarity. Research often fails to delineate the precise pathways through which different strength-based interventions, such as gratitude versus "Best Possible Self", influence various behavioral intentions (Dennis & Ogden, 2024; Power et al., 2025). This complexity demands targeted investigation to understand which specific strength-based intervention is most effective for a given behavioral outcome, such as exercise adherence or reduced emotional eating.

Thus, the evidence supports the need to shift the research focus. A crucial future direction is the need to explore the design principles in developing a strength-based module for sustained dietary behavior change and to evaluate its feasibility in a clinical context. This preliminary work is necessary to establish the foundation for a new generation of interventions, advancing the field beyond managing deficits toward building lasting psychological strength.

#### **2.4.3 The Underrepresentation of Psychological Module Development Integrating Quranic Values for Dietary Change**

The intricate relationship between religious belief, health, and behaviour change, particularly concerning obesity in Muslim populations, has emerged as a significant area of research (Arslan & Aydın, 2024 ; Iftikhar et al., 2016). A review of the current literature reveals three main themes: the mandate for a healthy lifestyle rooted in Islamic teachings, the utility of faith-based settings for intervention delivery, and a notable disciplinary bias in current research.

The fundamental principle that Islam advocates a healthy lifestyle, drawing on the nutritional wisdom of early Muslims, is a recurrent theme, providing a strong cultural and theological basis for health interventions (Ahmed et al., 2017; Iftikhar et al., 2016). These religious principles are considered powerful mediators for changing health behaviours, with studies demonstrating the effectiveness of faith-based interventions utilizing practices like voluntary fasting and food portion control for

weight management (Ismail et al., 2013). Furthermore, the role of religion and religiosity is seen to moderate an individual's engagement in pro-health activities (Lipowska et al., 2022), and psychological mechanisms, such as social identity, are instrumental in driving adherence to religious dietary guidelines (Arslan & Aydın, 2024). Consequently, Islamic religious settings like mosques and *madrassas* are widely recognised by stakeholders as acceptable and appropriate channels for delivering culturally appropriate obesity prevention initiatives (Dogra et al., 2021; Hall et al., 2024).

Despite the consensus on the importance of an Islamic approach, a research gap persists in the disciplinary focus of existing interventions. Most published studies are situated within the scientific disciplines, focusing on public health, preventive medicine, behavioural nutrition, and science-based lifestyle recommendations. (Dogra et al., 2021; Iftikhar et al., 2016; Rai et al., 2019) . For example, interventions reported have largely centred on physical activity and general toolkit co-production (Hall et al., 2024; Rai et al., 2019). This dominance of the sciences has created a major void: a distinct lack of studies on module development that integrate Qur'anic values in a dietary behaviour change intervention under the psychology discipline. While the specialised field of Islamic Counselling exists, concentrating on incorporating religious values into therapy for psychological and social issues (Ifdil et al., 2023), its application to the development of structured, theory-driven modules for weight-related behaviour change remains largely unexplored. This gap is significant because sustainable dietary behaviour change requires understanding and addressing the psychological mechanisms of motivation, self-regulation, and internalised belief systems, which the psychological discipline is uniquely suited to address.

#### **2.4.4 Identified Research Gap and Original Contribution**

In summary, the reviewed literature reveals critical gaps that limit the effectiveness and contextual relevance of existing dietary behaviour change interventions. The lack of focus on sustaining behaviour change, the scarcity of empirically designed strength-based modules, and the minimal integration of Quranic values indicate the need for a more comprehensive and holistic approach. Addressing these limitations, this study

takes its point of departure by employing a design and development research methodology to formulate a strength-based module for sustained dietary behaviour change that integrates psychological principles with Quranic guidance.

## **2.5 CHALLENGES AND STRATEGIES FOR SUSTAINED DIETARY BEHAVIOUR CHANGE**

Despite decades of public health initiatives, the problem of unsustainable dietary behaviour change continues to impede global efforts to address obesity. While many interventions succeed in promoting short-term improvements, individuals frequently relapse into unhealthy eating patterns once external support is withdrawn. This highlights a persistent challenge in translating initial motivation into enduring habits. To date, no country has been able to halt the upward trend in adult overweight and obesity (Marie et al., 2025). In the absence of timely and effective interventions, the global prevalence is expected to continue rising. If current historical trends continue, it is estimated that by 2050 more than half of the global adult population will be living with overweight and obesity (Marie et al., 2025). These projections underscore the urgency of identifying strategies that foster sustained dietary behaviour change rather than temporary compliance. Therefore, this section discusses the challenges associated with sustaining dietary behaviour change and explores the concepts and model of sustained dietary behaviour change as a foundation for developing more effective and enduring interventions.

### **2.5.1 Challenges to sustain dietary behaviour change**

Obesity is widely recognized as a chronic and relapsing condition, necessitating life-long behavioral modifications for effective management (Ostojić et al., 2024). While initial weight loss can be achieved through various lifestyle modifications, including medical nutrition therapy and behavioural interventions, the pervasive challenge lies in the unsustainability of newly adopted dietary behaviours and the subsequent high rates of weight regain (Železnik et al., 2023). Lifestyle intervention strategies are

successful in promoting weight loss but are not good enough to sustain long-term weight loss as most obese patients regain their lost weight during follow up (Blomain et al., 2013; Figuls et al., 2013). These may be contributed by several factors physiologically, psychologically and socially.

Physiologically, some changes occur in the body of the obese which seem to adapt with new body weight after weight loss. According to Blomain et al. (2013), a compensatory mechanism occurs in the body of the obese such as weight loss-induced changes in energy expenditure, neuroendocrine pathways, nutrient metabolism, and gut physiology. For example, a decrease in resting energy expenditure (REE) may lead to weight gain (Blomain et al., 2013). Significant and persistent reductions in levels of leptin, cholecystokinin, insulin and increases in levels of ghrelin believed to be permissive of weight regain (Blomain et al., 2013). Physiological adaptation to losing weight has influence on appetite and eating behaviour. Even though behaviour might be driven by physiological cry, however this outer action can still be controlled allowing an individual some space to govern the body. Behavioural change during losing weight period, if being sustained can lead to long- term maintenance of weight loss (Greenway, 2015). It may be difficult to overcome physiology with behaviour but there is hope in counselling studies by empowering clients with self-control skills.

A prevailing theme in the literature, concerns the critical role of self-control in distinguishing between successful and unsuccessful weight management efforts (Bickel et al., 2018; Zhang et al., 2019). Successful weight loss maintainers consistently exhibit superior self-control when measured using tasks such as delay discounting, indicating a reduced preference for immediate, smaller rewards over delayed, larger rewards compared to control groups (Bickel et al., 2018). Being able to delay immediate rewards shows how much self-control and decision-making are needed to stick with a behaviour over time.

Conversely, the failure of restrained eating behaviors has been linked to a breakdown in cognitive control during food selection (Zhang et al., 2019). Restrained eaters who fail to adhere to their caloric restriction goals, deemed ineffective restrained eaters, exhibit a lack of cognitive conflict when choosing between high- and low-calorie foods (Zhang et al., 2019). Measured by shorter response times and fewer

gaze switches during choice tasks, this finding suggests that for unsuccessful dieters, the decision to consume palatable, high-calorie food may be less of a deliberative struggle and more of an automatic, impulsive response (Zhang et al., 2019). This absence of experienced conflict in ineffective restrained eaters contrasts sharply with the higher conflict experienced by effective dieters choosing the low-calorie option, implying that a failure to restrain eating may be intrinsically tied to a failure to identify or experience the conflict between a long-term goal (weight maintenance) and short-term temptation (eating enjoyment; Zhang et al., 2019).

The challenge of sustaining new dietary behaviors is further compounded by the persistence of old, unhealthy habits, which are often neglected in intervention design (Gardner et al., 2021). Habitual behaviors are actions automatically triggered by environmental cues due to learned cue-action associations (Gardner et al., 2021). While interventions often focus on inhibiting unwanted impulses or avoiding cues, they may only succeed in discontinuing the behavior without disrupting the underlying habit associations (Gardner et al., 2021). Consequently, when an individual's motivation or willpower is momentarily weakened, or when they return to familiar settings, these unchecked, unwanted habit associations render them highly prone to lapse into old patterns of unhealthy behavior (Gardner et al., 2021). For maintenance to be truly effective, intervention strategies must explicitly incorporate techniques that directly override old habit associations by fostering new, competing habit pathways (Gardner et al., 2021).

Moreover, individuals who experience weight regain often articulate a profound critique of the prevailing weight-centered approach, reframing their "failure" through alternative etiological theories (Ekman, 2018). Drawing on qualitative methodologies, participants in one study described two distinct explanatory shifts for weight regain: cause-shifting and problem-shifting (Ekman, 2018). Cause-shifting attributes overeating and subsequent weight to external or underlying problems, such as using eating as a mechanism for handling other problems (Ekman, 2018). Problem-shifting fundamentally defines fatness not as the problem itself, but as a symptom of a deeper, "real" underlying issue (Ekman, 2018). From this perspective, weight-centered methods are not only ineffective but are ironically seen as contributing to the overall weight problem (Ekman, 2018). This lived experience perspective is corroborated by

other qualitative research suggesting that previous unsuccessful attempts to lose weight are often characterized by a lack of personal control and the presence of unmanaged life stressors (Rana et al., 2021).

A central mechanism driving the unsustainability of adopted dietary behaviors is the physiological and psychological toll of calorie deprivation (Standen & Mann, 2022). Restrictive dieting is widely presumed to undermine self-control; yet, direct causal evidence has historically been sparse (Standen & Mann, 2022). However, recent experimental evidence indicates that a period of calorie deprivation selectively impairs the self-control of eating, but critically, does not impair self-control across other, non-eating-related behaviors (Standen & Mann, 2022). This finding is paramount as it suggests that the very strategy employed for weight loss, caloric restriction, causes biological and psychological changes that specifically undermine the cognitive resources needed to sustain the required dietary restraint, thereby setting the stage for subsequent failure (Standen & Mann, 2022).

Compounding this cognitive resource depletion are maladaptive psychological traits (Ostojić et al., 2024). Unsuccessful weight loss in women is significantly associated with a higher degree of dysfunctional attitudes and beliefs, as well as elevated scores of frustration intolerance (Ostojić et al., 2024). These cognitive and emotional factors represent barriers that impede the consistency and perseverance necessary for long-term adherence to challenging dietary regimes, highlighting the need to integrate cognitive restructuring into behavioral interventions (Ostojić et al., 2024).

Recent research shows a growing interest in the psychological factors that help people maintain behaviour change, with motivation still being a main focus in weight loss studies (Železnik et al., 2023). The field has seen a methodological shift in intervention design, moving away from purely outcome-focused goals (e.g., specific weight loss targets) toward process-focused goals (e.g., how to eat and exercise) (Furman & Rothman, 2020). Process-focused programs have demonstrated significant behavioral benefits, including greater workout attendance and higher completion of program requirements, compared to traditional outcome-focused approaches (Furman & Rothman, 2020). This evidence shows that people are more likely to stick with

weight loss efforts when they focus on the process of change instead of just the final goal (Furman & Rothman, 2020).

The failure to sustain behavioral change inevitably leads to weight cycling (i.e., repeated cycles of weight loss and regain), a pervasive outcome of unsustainable diets (Schwander et al., 2025). The consequences of weight cycling are far-reaching, encompassing not only health risks but also significant negative health economic impacts from a societal perspective (Schwander et al., 2025). This cyclical pattern serves as the ultimate indicator of the unsustainability of temporary dietary changes and reinforces the urgent necessity for interventions designed for long-term maintenance and relapse prevention.

The body of literature on the unsustainability of newly adopted dietary behavior is marked by a critical synthesis of cognitive mechanisms, habitual automaticity, and the paradoxical effects of restrictive dieting. The collective findings demonstrate that sustained weight management is not merely a function of initial motivation, which is a major research focus (Železnik et al., 2023), but a complex interplay of superior self-control (Bickel et al., 2018), the ability to experience cognitive conflict during food choice (Zhang et al., 2019), and overcoming the selective self-control impairment caused by the very act of calorie deprivation (Standen & Mann, 2022). Furthermore, enduring adherence requires disrupting deeply ingrained old habit associations (Gardner et al., 2021) and addressing the individual's perceived underlying problems that drive emotional eating (Ekman, 2018; Rana et al., 2021). The shift toward process-focused interventions (Furman & Rothman, 2020) and a critical understanding of weight cycling (Schwander et al., 2025) suggests a critical trajectory for future research and clinical practice, moving away from short-term outcomes to the development of robust, sustainable, and psychologically informed maintenance strategies.

### **2.5.2 Sustained Dietary Behaviour Change**

The successful management of body weight necessitates not merely transient adherence to restrictive diets, but the achievement and sustained maintenance of desired dietary behaviours. The accumulated body of literature identifies this sustainability as a critical challenge, underscoring a decisive conceptual shift from viewing long-term success as simple compliance to a deeper, multifaceted problem of psychological and behavioural self-regulation (Hamer et al., 2024; Wardzinski et al., 2024).

A common theme in the literature is that internal psychological factors play a key role in initiating and maintaining behaviour change, going beyond the limits of rule-based or prescriptive approaches. The decision to change often begins from within, usually arising when a person experiences both a sense of suffering and a triggering event that motivates action (Berkemeyer & Wehrmann, 2022). Critically, maintenance, as conceptualized in the Sustainable Nutritional Behavior Change (SNBC) model, depends on a person's inner motivation and their ability to reflect on their own choices (Berkemeyer & Wehrmann, 2022).

This framework is supported by theoretical models such as the Capability, Opportunity, and Motivation (COM-B) model. An empirical examination across behavioural contexts demonstrated that both an individual's psychological and physical capability and their social and physical opportunity influence eating behaviour primarily through their impact on motivation (Willmott et al., 2021). This finding suggests that effective interventions should focus on strengthening both internal abilities and external supports to enhance motivation, which is the key to turning intention into lasting action (Willmott et al., 2021). Furthermore, while the initial phase of environmentally motivated changes may require high levels of self-control to manage conflicting motivations, the long-term success of changes, even small ones, relies on establishing low-effort strategies to prevent resource depletion (Wehbe et al., 2022).

Beyond conscious motivation, the literature emphasizes the role of automaticity and the physiological mechanisms of eating as determinants of long-term success. Habits, defined as automatic actions triggered by learned cue-action associations, emerge as a major factor in weight maintenance (Gardner et al., 2021). The challenge lies in addressing the neglected factor of old habits, which persist even after new behaviours are adopted, serving as potent relapse triggers when motivation or willpower is diminished (Gardner et al., 2021). Merely inhibiting unwanted impulses, rather than fundamentally breaking the underlying habit associations, is insufficient for sustained change (Gardner et al., 2021).

Recent research has explored non-dietary interventions that specifically target the physiological signals underlying eating behaviour. A psychological app program demonstrated that relearning physiological satiety cues led to sustained weight loss over a 12-month follow-up by significantly reducing internal experiences such as food cravings and emotional discomfort that trigger emotional eating (Wardzinski et al., 2024). The synthesis of this result suggests that conventional weight loss concepts often fail because they overlook the need to train internal hunger and satiety signals, forcing individuals into an unsustainable reliance on conscious effort (Wardzinski et al., 2024). This evidence advocates for a fundamental shift in intervention design, moving from external dietary rules to fostering automatic, internally-regulated control over food intake.

Studies employing sophisticated analytical techniques, such as Latent Class Analysis (LCA), have clarified the temporal dynamics of adherence. LCA identified distinct patterns of behavioural adherence to multiple health recommendations (e.g., fat intake, physical activity) and demonstrated that adherence patterns established within the first six months of an intervention are highly predictive of long-term weight outcomes (Fitzpatrick et al., 2018). This finding suggests that the initial phase is crucial for establishing the foundational structure of the sustained behaviour pattern, necessitating intensive and tailored support during this window.

Furthermore, the context of the individual critically influences the strategies required for maintenance. Qualitative research among specific demographic groups, such as African American patients with Type 2 Diabetes, highlights the necessity of integrated strategies spanning four domains: nutrition, physical activity, psychosocial/cognitive skills, and self-monitoring (Fitzpatrick & Hill-Briggs, 2017). This emphasizes that successful weight management is an intrinsically complex, multi-behavioural task that cannot be isolated to dietary changes alone (Fitzpatrick & Hill-Briggs, 2017). Even in the context of bariatric surgery, a systematic review confirms that psychological determinants and post-operative dietary behaviours remain the most significant factors associated with subsequent weight regain (Althumiri et al., 2024), further reinforcing that a physical intervention does not negate the persistent psychological challenge. Ultimately, long-term success, particularly in the face of environmental pressures, requires an experientially derived model of flexible and intentional actions, allowing individuals to adapt to challenges without resorting to the rigid control that often precipitates relapse (Natvik et al., 2019).

In summary, the literature on sustained dietary behaviour change converges on a core principle: sustainability of dietary behaviour change is attained through the development of strong internal motivation, supported by self-reflection, psychological and physical capability, and conducive external environments that together enable long-term self-regulation and low-effort maintenance of healthy eating habits. Future interventions should integrate the enhancement of intrinsic motivation, the deliberate disruption of old habit associations, and the training of physiological self-regulation mechanisms to move beyond transient weight loss toward genuinely enduring behaviour change.

### **2.5.3 Improving Dietary Adherence through Counselling and Self-help Books**

The current trend regarding dietitians' effectiveness in Malaysia in achieving patient compliance with dietary advice shows a significant challenge, with low adherence rates being a serious concern. A study focusing on poorly controlled Type 2 Diabetes Mellitus (T2DM) outpatients in a Malaysian hospital, even after they attended diet

counseling, found that only a minority, 16.4%, adhered to the dietary regimen provided by dietitians (Tan et al., 2011). Similarly, other Malaysian research has focused on assessing compliance and identifying barriers among individuals with dyslipidemia receiving dietary counseling (Sulaiman et al., 2016). This low rate of successful behavior change exists within a national context where a high percentage of the population is overweight or obese, underscoring the vital need for effective lifestyle interventions (Abd Majid et al., 2018).

To improve this adherence, the role of counselling must extend far beyond basic nutritional education. Effective lifestyle change requires dietitians to integrate theory-based behavior change skills and counseling strategies, rather than simply focusing on providing information (Snetselaar, 2010). However, the literature highlights a critical skill gap: many Registered Dietitians (RDs) are comfortable with the technical skill of information giving but are less comfortable with theory-based counseling (Snetselaar, 2010). This often results in a professional encounter that conveys the nutritional message without empowering the client to navigate the internal private experiences that sabotage eating decisions, such as powerful emotions, intense cravings, and self-defeating thoughts. The difficulty of sustained weight management, often resulting in repeated cycles of weight loss and regain, further emphasizes that these internal barriers must be addressed (Nozari, 2018). Effective counseling for maintaining healthy eating patterns requires strategies, often from models like cognitive behavioral therapy, to deal specifically with ingrained habits such as emotional eating (Jinks, 2016; Snetselaar, 2010). Furthermore, the importance of relational factors like empathy has been noted in the Malaysian context, linking provider empathy to better patient outcomes and calling for dietitians to examine their clinical encounters (Yang & Fu, 2018).

A powerful solution to bridge this gap and widely disseminate the necessary psychological skills is the provision of a self-help book authored or endorsed by expert counsellors. This approach, known as guided self-help, utilizes accessible resources like workbooks, facilitated by a health professional, making psychoeducation more widely available than intensive, specialized psychotherapy (Albano et al., 2025). Interventions based on Acceptance and Commitment Therapy (ACT), a third-wave cognitive behavioral approach, have proven effective in teaching

clients to manage their internal world. A guided self-help ACT program designed to regulate eating, which relied on a self-help book, successfully shifted key psychological processes like mindfulness and acceptance, and reduced emotional eating in participants (Jinks, 2016). This type of acceptance-based guided self-help is now being tested as a feasible method for weight loss maintenance after patients complete initial behavioral programs, suggesting its utility in sustaining long-term dietary behavior change by teaching clients how to cope with difficult thoughts and feelings (Jones et al., 2025). Thus, a counsellor-developed self-help resource offers a cost-effective, high-reach method for providing the psychological tools needed to support and sustain adherence to nutritional advice.

## **2.6 THEORIES TO DEVELOP A BIBLIOTHERAPY MODULE FOR SUSTAINED DIETARY BEHAVIOUR CHANGE**

According to Hoover and Donovan, a theory is “a set of related propositions that attempts to explain, and sometimes to predict, a set of events” (2013). Theory offers patterns for interpreting data, establishes connections between studies, provides structures within which concepts and variables are given special significance, and allows us to understand the broader implications of our findings for ourselves and others (Hoover & Donovan, 2013). Thus, theories are useful in the area of instructional design because it organize and summarize relevant knowledge that are required in its development.

The foundations of this study are theories in :

1. Counselling
2. Bibliotherapy
3. Instructional message design.

## **2.6.1 Counselling Theories for Sustained Behavioural Change**

The pervasive global challenge of obesity necessitates the development of effective, evidence-based psychological interventions to support sustained dietary and lifestyle behaviour change (Hamer et al., 2024). Hence, this section analyzes and synthesizes current research trends, focusing on the application, efficacy, and gaps of various counselling theories used in weight management for adults with overweight or obesity.

### ***2.6.1.1 Current Trends in Counselling Theories Applied to Weight Loss Interventions***

The current landscape of psychological interventions is primarily categorized by three theoretical themes: traditional behavioural and cognitive approaches, motivational interviewing, and the emerging third-wave cognitive behavioural therapies (TWCBTs).

Foundational to the field are traditional Behavioural Weight Management Interventions (BWMI), which consistently demonstrate a positive impact on several critical Eating Behavior Traits (EBTs), such as reducing uncontrolled eating and susceptibility to hunger (Kudlek et al., 2025). Furthermore, BWMI are associated with a significant and sustained improvement in restraint at 12-month follow-up, which is a key trait for long-term weight control (Kudlek et al., 2025).

Moving beyond general behaviour therapy, specialized cognitive strategies, such as Cognitive Training (CT) or Cognitive Bias Modification (CBM), represent a trend toward targeting underlying cognitive mechanisms, specifically retraining implicit biases toward unhealthy foods as an adjunctive approach to existing programs (Navas et al., 2021). An alternative, yet focused strategy is Interpersonal Psychotherapy (IPT), which targets the social and interpersonal contexts associated with obesity and co-occurring issues, demonstrating effectiveness when systematically compared to Cognitive-Behavioral Therapy (CBT) and Behavioral Weight Loss (Toledo et al., 2023).

Complementing these approaches is the strong support for Motivational Interviewing (MI), which serves as a highly effective tool for facilitating adherence to healthy behaviours. Meta-analytic evidence, particularly in women, consistently reports positive changes in anthropometric measures like weight and Body Mass Index (BMI) compared to control groups (Suire et al., 2021). This theory's efficacy is also noted in specific populations, with systematic reviews identifying MI as an effective psychological therapy for improving various lifestyle behaviours, including dietary intake, in pre-pregnant women (van der Windt et al., 2021).

More recently, a significant portion of research has focused on the application of TWCBTs, which prioritize psychological flexibility, acceptance of internal experiences, and value-directed action (Lawlor et al., 2020). Mindfulness-Based Interventions (MBIs) are a prominent example, frequently investigated for their role in stress reduction and the ability to mitigate problematic eating patterns, most notably emotional eating, in adults with overweight or obesity (Smith et al., 2023; Sosa-Cordobés et al., 2023). Similarly, Acceptance and Commitment Therapy (ACT) has been systematically reviewed for its impact on both weight management and broader psychological well-being, showing mixed but promising results in improving eating behaviour-related aspects when compared to control groups (Iturbe et al., 2022).

Despite this robust methodological approach, a critical gap emerges around the sustainability of treatment effects and the challenge of relapse prevention (Hamer et al., 2024). For instance, although BWMI show strong post-treatment effects, the beneficial changes in high-impact EBTs like uncontrolled eating, external eating, and emotional eating are not sustained at 12-month follow-up (Kudlek et al., 2025). This deficiency is compounded by the explicit finding that BWMI show no effect on difficult psychological traits such as emotional eating or hedonic hunger (Kudlek et al., 2025). The research acknowledges a need for interventions specifically designed for long-term maintenance and for strategies, such as MBIs, that are explicitly targeted at specific emotional eating deficits (Smith et al., 2023).

Based on the evidence, the following psychological theories have demonstrated efficacy in weight management, making them essential components for developing a self-help book focused on sustained dietary behaviour change:

1. Motivational Interviewing (MI): Crucial for enhancing intrinsic motivation, increasing commitment, and improving adherence to lifestyle changes (Suire et al., 2021; van der Windt et al., 2021).
2. Traditional Behavioural Therapy: Principles such as self-monitoring, goal setting, and contingency management are vital for fostering the trait of restraint, which shows sustained improvement at long-term follow-up (Kudlek et al., 2025).
3. Mindfulness-Based Interventions (MBIs): Effective for directly addressing the significant challenges of emotional eating and reducing general stress levels, which are common psychological triggers for dietary non-adherence and weight regain (Smith et al., 2023; Sosa-Cordobés et al., 2023).
4. Acceptance and Commitment Therapy (ACT): Essential for cultivating psychological flexibility, allowing individuals to non-judgmentally accept cravings and setbacks while staying committed to long-term health values, which is key for relapse prevention.

#### ***2.6.1.2 Counselling Theory Selection in Light of Qur'anic Guidance***

Traditional Behavioural Therapy (TBT), provides interventions centered on external control, focusing on tangible actions like calorie counting and increasing physical activity, which are effective in improving traits such as uncontrolled eating in the short term (Kudlek et al., 2025). However, TBT often shows a critical limitation in addressing the internal, psychological drivers of behaviour, yielding no evidence of sustained effects on emotional eating (Kudlek et al., 2025). Therefore, a robust theoretical model must engage with the deeper, value-driven principles of conduct, particularly those encapsulated in the *tawhidic* epistemology, which posits that eating behaviour must be grounded in the awareness of divine guidance and accountability to the Creator.

This necessity highlights the conceptual difference regarding the purpose of eating. The Qur'anic guidance emphasizes that eating is an act of servitude, gratitude, and a means to sustain life for worship (refer section 2.2.2). Which is to say, purpose and values are foundational. Hence, while TBT's focus is on compliance and immediate outcomes, and Motivational Interviewing (MI) is a powerful client-centered communication style designed to resolve ambivalence and facilitate adherence (Suire et al., 2021), neither intrinsically addresses ultimate purpose. Thus, the selection pivots toward Acceptance and Commitment Therapy (ACT), whose emphasis on values-guided action directly aligns with the Qur'anic mandate to cultivate clarity of values like gratitude and love for Allah (refer 2.2.2). This framework enables the spiritual principle to be operationalised into specific, committed behaviours (Lawlor et al., 2020).

Furthermore, the theories vary in their approach to setting and maintaining realistic goals of eating behaviour. Both TBT and ACT incorporate the design of realistic, specific goals through their behavioural strategies and committed action components, respectively, which have been shown to be effective in weight management (Iturbe et al., 2022; Kudlek et al., 2025). Conversely, while MI is highly effective in increasing an individual's motivation and adherence to an existing plan, leading to significant weight and BMI reduction in some populations (Suire et al., 2021; van der Windt et al., 2021), it is not a theory primarily concerned with the content or design of the goal itself, but rather the individual's readiness to pursue it.

This leads to a critical examination of the Ramadan fasting skills, the ability to tolerate and accept uncomfortable emotions or body sensations while pursuing a long-term goal, which the Qur'anic perspective explicitly links to the development of self-regulatory skills and the ability to manage internal experiences (refer section 2.2.4). Therefore, ACT's core component of Acceptance, the willingness to experience uncomfortable thoughts, cravings, or negative emotions without acting on them, is highly congruent with this divine prescription (Iturbe et al., 2022). Similarly, Mindfulness-Based Therapy (MBT) also highlights this skill, as its central tenet is cultivating a non-judgmental, present-moment awareness of internal states, leading to improved stress regulation which is vital for reducing emotional eating (Smith et al., 2023; Sosa-Cordobés et al., 2023). However, TBT does not highlight the skill of

acceptance; rather, its conventional approach of seeking to control or suppress problematic internal states is the very mechanism through which emotional eating often persists, resulting in the failure to achieve sustained weight loss (Lawlor et al., 2020; Kudlek et al., 2025).

The theories also diverge on managing the influence of negative thoughts, metaphorically addressed in the Qur'an as maintaining awareness of and putting a distant from satanic whispers (refer section 2.2.4). Consequently, ACT's technique of cognitive defusion, learning to observe thoughts (e.g., "Just one bite," or self-criticism) as transient mental events rather than literal truths, serves as a psychological equivalent of this spiritual distancing. In contrast, TBT, rooted in earlier Cognitive Behavioural Therapy, often directs clients to challenge or modify negative thoughts, inadvertently increasing their functional importance and fostering a "thought struggle" (Lawlor et al., 2020). Furthermore, while MBT cultivates a non-judgmental awareness of thoughts, ACT combines this skill with a clear, values-driven committed action, ensuring the distance created by defusion is immediately channeled toward a desired behaviour.

Finally, the application of stimulus control skill, distancing oneself from prohibitions by controlling the environment (refer section 2.2.4), is a practical strategy that both TBT and ACT incorporate. Thus, TBT fundamentally includes stimulus control (e.g., removing tempting food) as a core technique (Kudlek et al., 2025). ACT, while a third-wave approach, flexibly integrates these classical behavioural strategies under the umbrella of "committed action", using them functionally in service of the client's values (Iturbe et al., 2022). By comparison, MI focuses on readiness for environmental change (Suire et al., 2021), and MBT's primary focus is internal awareness, making stimulus control a secondary or derived skill. Hence, ACT emerges as the most comprehensive framework, as it integrates the proven behavioural tools of TBT with the acceptance skills of MBT, and most significantly, frames all actions within a values-driven context that is conceptually congruent with the Qur'anic emphasis on purpose, self-regulation, and spiritual accountability (Lawlor et al., 2020).

Table 2.7 Alignment of Major Psychological Theories with Qur'anic Principles for Sustained Dietary Change

No.	Qur'anic guidance	Motivational Interviewing	Traditional Behavioural Therapy	Mindfulness-based Therapy	Acceptance and Commitment Therapy
<b>1.0</b>	<b>Purposes of Eating / Values</b>	x	x	x	✓
1.1	Eating as an expression of gratitude				
1.2	Eating as a means of attaining Allah's love				
1.3	Eating as an act of worship and proof of belief				
<b>2.0</b>	<b>Goals of Eating Behaviour</b>	x	✓	x	✓
2.1	To eat Halal				
2.2	To eat Tayyib				
2.3	To eat in moderation (not excessively)				
<b>3.0</b>	<b>Skills</b>				
3.1	Ramadan Fasting Skill : <ul style="list-style-type: none"> <li>• Clarification of Values</li> <li>• Making room for internal private experiences</li> </ul>	x	x	✓	✓
3.2	Behavioural Skill : Stimulus control	x	✓	x	✓
3.3	Cognitive skill : <ul style="list-style-type: none"> <li>• Notice the thoughts</li> <li>• Seek refuge from Allah SWT</li> </ul>	x	x	✓	✓

### ***2.6.1.3 Acceptance and Commitment Therapy (ACT) in Dietary Behaviour Change***

Acceptance and Commitment Therapy can help reduce emotional eating by means of empowering the client in increasing their tolerance to emotion (Frayn et al., 2019). By focusing on improving general functioning and engagement with valued activities, ACT can practically help via reducing experiential avoidance as well as promoting alternative responses to distressing internal events (Hill et al., 2015). High tolerance to emotion may reduce engagement in ineffective coping mechanism such as eating (Frayn et al., 2019). A study conducted by Hill and colleagues (Hill et al., 2015) discovered that ACT was useful for emotional eaters. The participants reported among elements that benefited them were focusing on promoting self-compassion, distancing from and relating to difficult thoughts, focusing on long-term goals and values, learning emotional awareness and acceptance and practicing mindful eating (Hill et al., 2015).

Comparing between ACT with traditional cognitive behavioural therapy (CBT), a study found that CBT produced modest decreases in eating disorder symptoms while ACT produced large decreases (Juarascio et al., 2010). ACT was also found better than traditional cognitive-based strategies among overweight and obese women (Forman et al., 2013). The pilot study of Forman and colleagues found that ACT lower cravings and reduced consumption of food cravings (Forman et al., 2013). This somehow inconsistent with neural activity study that showed distraction skill of cognitive behavioural therapy leads to lower craving as compared to acceptance commitment therapy strategy, specifically acceptance (Demos McDermott et al., 2019). However, such premise is not strong enough to prove CBT is better than ACT as findings of the study only focus on one component of each theory and not looking to the theory as a whole.

There are a few cognitive strategies in counselling. Traditional cognitive therapy propagates the idea of cognitive restructuring while ACT propose cognitive defusion. These two strategies are of different skill from the same cognitive domain. Moffit et al. (2012) compared these two strategies on chocolate cravers to explore the effectiveness of each intervention. Among cognitively distressed chocolate cravers, participants being trained with cognitive defusion were more restraint from chocolate than participants intervened with cognitive restructuring (Moffitt et al., 2012).

Cognitive defusion participants also reported having improvements in eating behaviours and rated significantly easier to use cognitive defusion as compared to cognitive restructuring (Moffitt et al., 2012). In contrary, the instruction to suppress craving-related thoughts via traditional cognitive-based strategies has been associated with subsequent overeating and increased cravings (Erskine & Georgiou, 2010).

#### ***2.6.1.4 Implementation of ACT in Bibliotherapy Module***

Delivering information about ACT in the form of a book (bibliotherapy module) means creating awareness among the readers about psychological flexibility. Psychological flexibility involves the capacity to engage with the current moment in a more complete manner as a conscious individual and to be committed in actions based on whether they align with one's valued objectives (Hayes et al., 2012). Psychological flexibility is based on the notion that individuals inherently have the ability to choose their responses when faced with challenging thoughts and emotions, even if they cannot exert control over the thoughts and emotions themselves (Ong & Eustis, 2023). There are six subprocess of change in ACT namely acceptance, defusion, contact with the present moment, self-as-context, values and committed action. These six subprocess of change should be arranged one by one to help the readers grasp the understanding of its concepts.

Psychological flexibility is a non-linear model. In real counselling session, it is the counselor who need to decide based on clinical judgment, of which subprocess do the client needs the most at the moment. Specifically in relation to the phenomena of eating among the overweight and obese, one need to know which subprocess of psychological flexibility need to be tackled first based on most problematic weight-related difficulties. According to Sairanen's review, most people who unable to maintain weight loss or regain weight, usually have high experiential avoidance such as eating in response to aversive internal experiences and use eating as way of coping with negative emotional states (Sairanen, 2016). Thus, for the overweight or obese population fixated on feeling good and getting rid of unwanted feelings, begin with creative hopelessness is a good move (Harris, 2019). The concept of "acceptance"

could not be introduced before the context of avoidance and control is disrupted, hence “creative hopelessness” is best introduced earlier in the book.

As mentioned earlier, psychological flexibility is a non-linear model. Hence, to implement it in a form of book, the author introduced the subprocess of change in ACT based on their judgment. The following Table 2.8 is the sequence of subprocesses chosen by different authors in writing an ACT-based self-help book for healthy eating.



Table 2.8 Content of previous ACT-based self-help book related to dieting

<b>Title of book</b>		The Weight Escape: How to stop dieting and start living.	The diet trap: Feed your psychological needs & end the weight loss struggle using Acceptance & Commitment Therapy.	Healthy habits suck: How to get off the couch and live a healthy life... Even if you don't want to.
<b>Authors</b>		Joseph Ciarrochi, Ann Bailey and Russ Harris	Jason Lillis, Joanne Dahl, Sandra M. Weinland	Dayna Lee-Baggley
<b>Year of publication</b>		2014	2014	2019
<b>Content</b>	<b>Introduction</b>	<ul style="list-style-type: none"> <li>• What is ACT and what to expect.</li> <li>• Experiential avoidance</li> <li>• The choice point model</li> </ul>	What is ACT	<ul style="list-style-type: none"> <li>• Experiential avoidance</li> <li>• What is ACT</li> <li>• The choice point model</li> </ul>
	<b>Chapter 1</b>	<ul style="list-style-type: none"> <li>• Experiential avoidance</li> <li>• Values</li> <li>• Committed action</li> </ul>	<ul style="list-style-type: none"> <li>• Experiential avoidance</li> <li>• Creative hopelessness</li> </ul>	<ul style="list-style-type: none"> <li>• Values</li> <li>• Acceptance</li> </ul>
	<b>Chapter 2</b>	<ul style="list-style-type: none"> <li>• Creative hopelessness</li> <li>• Acceptance</li> </ul>	<ul style="list-style-type: none"> <li>• Self-as-context</li> <li>• Contact with present moment</li> </ul>	<ul style="list-style-type: none"> <li>• Creative hopelessness</li> <li>• Values</li> </ul>
	<b>Chapter 3</b>	<ul style="list-style-type: none"> <li>• Acceptance</li> </ul>	<ul style="list-style-type: none"> <li>• Cognitive defusion</li> </ul>	<ul style="list-style-type: none"> <li>• Cognitive defusion</li> <li>• Committed action</li> </ul>
	<b>Chapter 4</b>	<ul style="list-style-type: none"> <li>• Cognitive defusion</li> </ul>	<ul style="list-style-type: none"> <li>• Experiential avoidance</li> <li>• Creative hopelessness</li> <li>• Acceptance</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance</li> <li>• Self-as-context</li> </ul>

<b>Chapter 5</b>	Cognitive defusion	<ul style="list-style-type: none"> <li>• Values</li> <li>• Committed action</li> </ul>	Contact with present moment
<b>Chapter 6</b>	<ul style="list-style-type: none"> <li>• Contact with present moment</li> <li>• Acceptance</li> </ul>	<ul style="list-style-type: none"> <li>• Committed action</li> <li>• Self-as-context (Dealing with relapse with self-compassion)</li> <li>• Values</li> </ul>	Self-as-context (self-compassion)
<b>Chapter 7</b>	Contact with present moment	Educational information for weight loss	<ul style="list-style-type: none"> <li>• Committed action</li> <li>• Acceptance</li> </ul>
<b>Chapter 8</b>	<ul style="list-style-type: none"> <li>• Contact with present moment</li> <li>• Committed action</li> </ul>	Nil	<ul style="list-style-type: none"> <li>• Self-as-context (managing relapse with self-compassion)</li> <li>• Committed action</li> </ul>
<b>Chapter 9</b>	<ul style="list-style-type: none"> <li>• Values</li> <li>• Self-as-context (self-compassion)</li> </ul>	Nil	<ul style="list-style-type: none"> <li>• Values</li> <li>• Committed action</li> </ul>
<b>Chapter 10</b>	<ul style="list-style-type: none"> <li>• Committed action</li> <li>• Values</li> </ul>	Nil	Nil
<b>Chapter 11</b>	<ul style="list-style-type: none"> <li>• Committed action</li> <li>• Values</li> </ul>	Nil	Nil
<b>Chapter 12</b>	Values	Nil	Nil

The bibliotherapy module can begin with introduction to valued living (Ciarrochi, Bailey, et al., 2014; Lee-baggley, 2019). There are three components of work in “acceptance” which can be practiced sequentially which are identifying functional relationships, disrupting the context of avoidance and control, and shaping an alternative response (Merwin et al., 2023). This is translated into written message by explaining the concept of experiential avoidance and creative hopelessness before introducing the concept of acceptance (Ciarrochi et al., 2014; Lee-baggley, 2019; Lillis et al., 2014).

## **2.6.2 Bibliotherapy for Behavioural Change**

### ***2.6.2.1 Advantages of bibliotherapy***

Bibliotherapy are used for many reasons in counselling. It is believed behavioural and emotional change can be observed through bibliotherapy technique (Tanrikulu, 2011b). It promotes the sense of universality and enable client to see unique and different way of solving an issue (Basari et al., 2018). It will also help the client to be more empathy and having more positive self-respect (Basari et al., 2018). The readers of self-help book reported such technique help them gain insight, understand themselves and others better and having more self-confidence (Tanrikulu, 2011b).

Starker (as cited by Tanrikulu [2011] ) mentioned there are at least four reasons for the use of bibliotherapy. It is more economic than meeting a professional therapist, it is easily accessible, it allows room for privacy and it provide chance for reader to be a member of an in-group of self-help book. Cornett and Cornett (1980) highlight nine beneficial changes of bibliotherapy intervention (as cited in McCulliss & Chamberlain, 2013) which are empathy, positive attitudes, personal and social adjustment, positive self-image, new interests, tolerance, respect and acceptance of others, realization that there is good in all people, socially accepted behaviours and examination of moral values for character development.

According to Aiex (1993; as cited in [McCulliss & Chamberlain, 2013] ), there are nine possible reasons for using bibliotherapy:

1. Demonstrating that an individual is not the only person to face a problem.
2. Demonstrating that there are multiple solutions to a problem.
3. Assisting an individual in more freely discussing a problem.
4. Assisting an individual in planning a constructive course of action to solve a problem.
5. Developing an individual's self-concept.
6. Relieving emotional or mental pressure.
7. Fostering an individual's honest self-appraisal.
8. Allowing a person to discover interests outside of himself.
9. Improving a person's understanding of human behaviour or motivations.

#### ***2.6.2.2 Process or principles in bibliotherapy***

In her doctoral dissertation from 1950, Caroline Shrodes proposed a theory of the dynamics of the aesthetic experience that was based on personality theory and psychoanalysis (Rubin, 1978). Her writings inform us the psychological underpinnings of bibliotherapy.

- Manifestations of dynamic processes reflected in reading literature  
according to Shrodes.**
- I. Identification
    - a. Expression of affect toward character
    - b. Expression of agreement or disagreement with character's opinions
    - c. Evidence of concern about a character's fate
    - d. Expression of homonymy, of pleasure in being like a character
  - II. Projection
    - a. Apperceptive projection
      - i. Interpretation of relationships between characters
      - ii. Interpretation of character's motives
    - b. Cognitive projections
      - i. Inferences re-author's meaning
      - ii. Explanation of outcome in terms of theory about life
      - iii. Superimposition of moral upon story
      - iv. Values asserted or erroneously deduced
  - III. Abreaction and catharsis
    - a. Evidence of emotion in verbalization (guilt, anxiety, tension)
    - b. Early memories aroused
    - c. Expression of aggression toward character or author
    - d. Evidence of transference ; i.e. reacting to symbolic experience as if to a previous total affective experience
  - IV. Insight
    - a. Evidence of self-recognition (feeling of belonging, self-understanding)
    - b. Evidence of recognition of others (understanding, tolerance, acceptance)
    - c. Accuracy and objectivity of analysis of motivations
    - d. Accuracy of cognitive perceptions (reality testing vs. stereotypy)
    - e. Incorporation of new concepts (i.e values, goals)
    - f. Integration (unconscious becoming conscious)

Figure 2.3 Manifestation of dynamic process as reflected in reading literature (Rubin, 1978)

The "classical view" of bibliotherapy with fiction is advocated by Pardeck & Pardeck (1984) with three stages of operation (as cited in Detrixhe (2010)). Firstly, clients recognise themselves in the life and problems of a character in a book during "identification and projection" stage, with the help of a therapist. Clients then experience an "emotional release" in the stage known as "abreaction and catharsis". Clients become aware that there is a problem in their lives and that a remedy is required in the final stage, "insight and integration". Pardeck also mentioned benefits of bibliotherapy which provide clients with the opportunity to learn new values and ideas.

Experience-taking is the term used to describe the immersive phenomena of imitating the thinking and demeanor of a protagonist (Kaufman & Libby, 2012). Through experience-taking, readers let go of their own identity and take on that of the character, adopting their ideas, feelings, objectives, characteristics, and actions, and experiencing the story as if they were that character (Kaufman & Libby, 2012). The potential for a story to alter a reader's self-concept, attitudes, and conduct increases with a capacity to elicit experience-taking and with the reader's capacity to imitate a character's subjective experience.

In another model, four steps have been recognised in bibliotherapy process (as cited in Tanrikulu (2011b)). Initially, clients are supposed to identify with a narrative character that has characteristics that are comparable to their own life. Clients then experience catharsis, or emotional release, after realising that they are not alone in their troubles. Following the catharsis, the clients gain understanding by investigating the assigned character's decisions and actions. At this point, clients are helped to solve their issues.

Earlier, in 1950, guided reading is used as a catalyst for discussion. The focus of the sessions was on a facilitator-led conversation (McCulliss, 2012). As a result, the material's feelings and thoughts were combined and aimed towards personal development. The act of reading itself was seen less important than guided discussion of assigned readings.

### ***2.6.2.3 Factors affecting experience-taking***

Upon entering a narrative world (antecedents), there are a few factors that either serve to facilitate or block a reader's experience-taking. The first factor is related to the readers' self-concept accessibility. The act of "letting go" of one's own identity and envisioning oneself having the character's subjective sensations is a key aspect of experience-taking. Being in a state of reduced self-concept accessibility should encourage higher levels of experience-taking by making it easier for readers to "forget" themselves and simulate the experience of a character. It follows that the degree to which one's personal identity is salient when reading a work of fiction would

be a crucial determinant of the occurrence of experience-taking. Contrarily, readers should find it harder to give up their identities and partake in experience-taking when they are in a state of increased self-concept accessibility (Kaufman & Libby, 2012).

The second factor is the narrative's voice. In contrast to third-person narratives, which expressly establish protagonists as separate entities, Kaufman & Libby (2012) anticipated that first-person narratives, which foster a more immediate sense of closeness and connection to the main character, would be more favourable to experience-taking. The third factor is shared group membership between reader and character. Readers would be more likely to engage in experience-taking when reading a first-person narrative with a primary character who belongs to a salient and important ingroup than when reading the same story without satisfying one or both of these crucial requirements (Kaufman & Libby, 2012).

#### ***2.6.2.4 Implementation of bibliotherapy principles***

All in all, to develop a book that optimize the benefit of bibliotherapy principles, the author should write and provide text that allow the process of identification, projection, catharsis to occur. Reflection exercises are also important as this will help the readers to gain insight.

#### **2.6.3 Instruction message design**

Messages consist of any pattern of signs utilized for communication between a sender and a receiver (Grabowski, 1995). They are arrangements of signs or symbols that have the potential to impact behaviour within the cognitive, affective, or psychomotor instructional domains.

Instruction can be described as the organization and sequencing of information for the learner, encompassing various essential elements such as presenting information, providing examples, facilitating practice, and offering feedback (Grabowski, 1995). Learning on the other hand is the outcome of effective coding, organization, integration, and translation of information (Grabowski, 1995).

Communication and learning theories had been traditionally used to inform instructional message design in designing and developing media, used for teaching and learning. Grabowski differentiate message design to two categories which are message design for instruction and message design for learning. Instructional message design focuses on external factors beyond the learner's control that can enhance learning, whereas learning-focused message design deals with strategies that activate internal factors to ensure the actual occurrence of learning (Grabowski, 1995).

The message design for instruction is related to communication theory while the message design for learning is related to learning theory.

### ***2.6.3.1 Communication theory and message design***

According to Bishop (2014) there are at least three model that explain human communication which are the Shannon-weaver model (1949), the Schramm model (1954) and the Berlo's Sender-Message-Channel-Receiver (S-C-M-R) model (1960). The Shannon-weaver model see communication as transmission while the Schramm model view communication as interaction. It was Berlo whom later on expand understanding about human interactions by focusing on sender, message, channel and receiver.

Berlo's model acknowledged the crucial role of shared experiences between the sender and receiver, encompassing communication skills, attitudes, knowledge, social systems, and culture (Bishop, 2014). It highlighted the significance of feedback from the receiver, seeking clarification on how the message was decoded. Unlike perceiving the communications channel as a mechanical conduit, Berlo's model identified the five human senses as the communication means (Bishop, 2014). Furthermore, the model centered on the message in the communication process, examining how content elements, treatment elements, and code structure impacted communication outcomes.

Richey et al. summarize the key principles of communication theory and instructional design (Richey et al., 2011a) as following :

1. The communication process can be seen as encompassing transmission, behaviour, interaction, or transaction.
2. The standard elements within the communication process include the information source, the message, auditory and visual channels, noise, environment, information receiver (taking into account cultural backgrounds and past experiences), interpretation of meaning, and feedback.

Figure 2.4 illustrate the message design general principles for instruction specifically with regards to text design (Grabowski, 1995).

<b>Key principles of message design for instruction</b>	
1.	Select page size based on other physical features to be used in the text design.
2.	Use consistent spacing and reference areas so as not to confuse the learner.
3.	Use spatial layout and white spacing to organize the display.
4.	For typefaces, type sizes and spacing, consider “sensible phrasing” and line length as one factor in their selection.
5.	Beware of non-standard typefaces, capitals, italics and underlining that impair reading flow.
6.	Use summaries, headings, questions and lists to help organize and sequence text.
7.	Short sentences and simple vocabulary will enhance comprehension.
8.	Use illustrations when they contribute to a message but be aware that they may also detract from it because of complexity or conflicting information.
9.	For graphs and charts, make semantic distance, sequential relationships reflect reality and directional relationships follow natural flow for reading.
10.	Keep tables and graphs simple, especially for low-ability learners.
11.	Use signalling strategies since both the content and the signalling strategy are stored in memory.

Figure 2.4 Key principles of message design for instruction

### ***2.6.3.2 Learning theory and message design***

Learning models concentrate on the reception and processing of messages by learners. Hence, designing effective instructional messages requires a deep understanding of learning theory. Historically, the prominent concept in psychology was the behaviourist orientation, which perceived learning as the capacity to execute new behaviours.

In the early 1980s, the educational technology literature witnessed a shift from the behaviourist model to the cognitive model of learning. Cognitivists prioritized knowing over responding, considering learning as an active process involving the acquisition, organization, and construction of new understandings from incoming stimuli (Bishop, 2014). From the cognitivist perspective, comprehending how knowledge is represented in memory became crucial for the development of instructional theory.

Over the years, Atkinson and Shiffrin's (1968) three-stage information-processing theory has exerted significant influence, especially within the realm of cognitivist learning theory models. Information-processing theorists contend that learning takes place when information, having been transferred and stored in long-term memory, can be retrieved when needed. In light of this perspective, the design of instructional messages should prioritize assisting learners in processing information, rather than solely eliciting behavioural responses .

Richey et al. summarize the key principles of learning theory and instructional design as the following (Richey et al., 2011b):

1. Learning happens when an individual links a stimulus to a reinforced response.
2. Memory traces consist of collections of items that share similarities or were presented closely, forming a stable and symmetrical shape normalized into something recognizable.
3. Three categories of memory exist: sensory memory, working memory, and long-term memory.

4. A schema refers to organized knowledge in memory, assisting in the comprehension of new information, as well as the storage and retrieval of previously acquired knowledge.
5. Learning takes place through the observation of other people's behaviour in social situations and the subsequent consequences they experience.
6. Self-efficacy serves as a fundamental determinant of learner behaviour.

### ***2.6.3.3 Application of communication and learning theory in message design***

The development of instructional message design evolved as a specialized area within instructional design, arising at the intersection of communication and learning theories (Bishop, 2014). Hence the application of communication and learning theory is important to inform instructional design.

To produce effective communication via product of research, the designer should consider the guidelines of text designs (Hartley, 2004) and write good structure of sentences as messages that are well-organized allow the human mind to process information more quickly (Richey et al., 2011a). The information load should also be managed by controlling the quantity of words or concepts, adjusting sentence complexity, and ensuring well integration of content (Richey et al., 2011a). Cueing techniques such as typographical cues can help the readers give attention to the messages (Richey et al., 2011a) . These cues include different typefaces, white space, side headings, labeling and illustrations. Content-generated attention can also be used to reduce the cognitive load. This is done by connecting the readers' prior knowledge with the content of the message so they pay more attention to familiar material (Richey et al., 2011a).

Specifically for this study, cognitive learning theory is chosen to guide the design and development of bibliotherapy module. The applications of cognitive learning theory in instructional design include message design strategies, chunking, mnemonics and advance organizers (Richey et al., 2011b).

An effective instruction captures attention and aids recall. This is the function of message design strategies. Designers need to accentuate an inherent sense of order and organization in the lesson. This conceptual structure plays a crucial role in establishing and preserving accurate memories of the instruction.

Chunking help to increase the amount of information that can remain in working memory. Thus, to enhance effective learning and ensure lasting retention, instructional designers can develop materials that include recoding activities, acknowledging the limited capacity of short-term memories (Richey et al., 2011b).

Mnemonics offer another effective method for promoting the storage and recall of information. It serves as a cue to aid in the retrieval of factual information. Lastly, advance organizers may help to bridge the gap between what learners know and what they need to know when learning the material. They are introductory materials presented at a broader level of generalization, simplification, and comprehensiveness than the actual learning content (Richey et al., 2011b).

## **2.6.4 Theoretical Framework and Proposed Design Principles**

### ***2.6.4.1 Theoretical framework***

Three types of basic foundation and theories had been discussed earlier which are Acceptance and Commitment Therapy (counselling theory), principles of bibliotherapy process and Instruction Message Design.

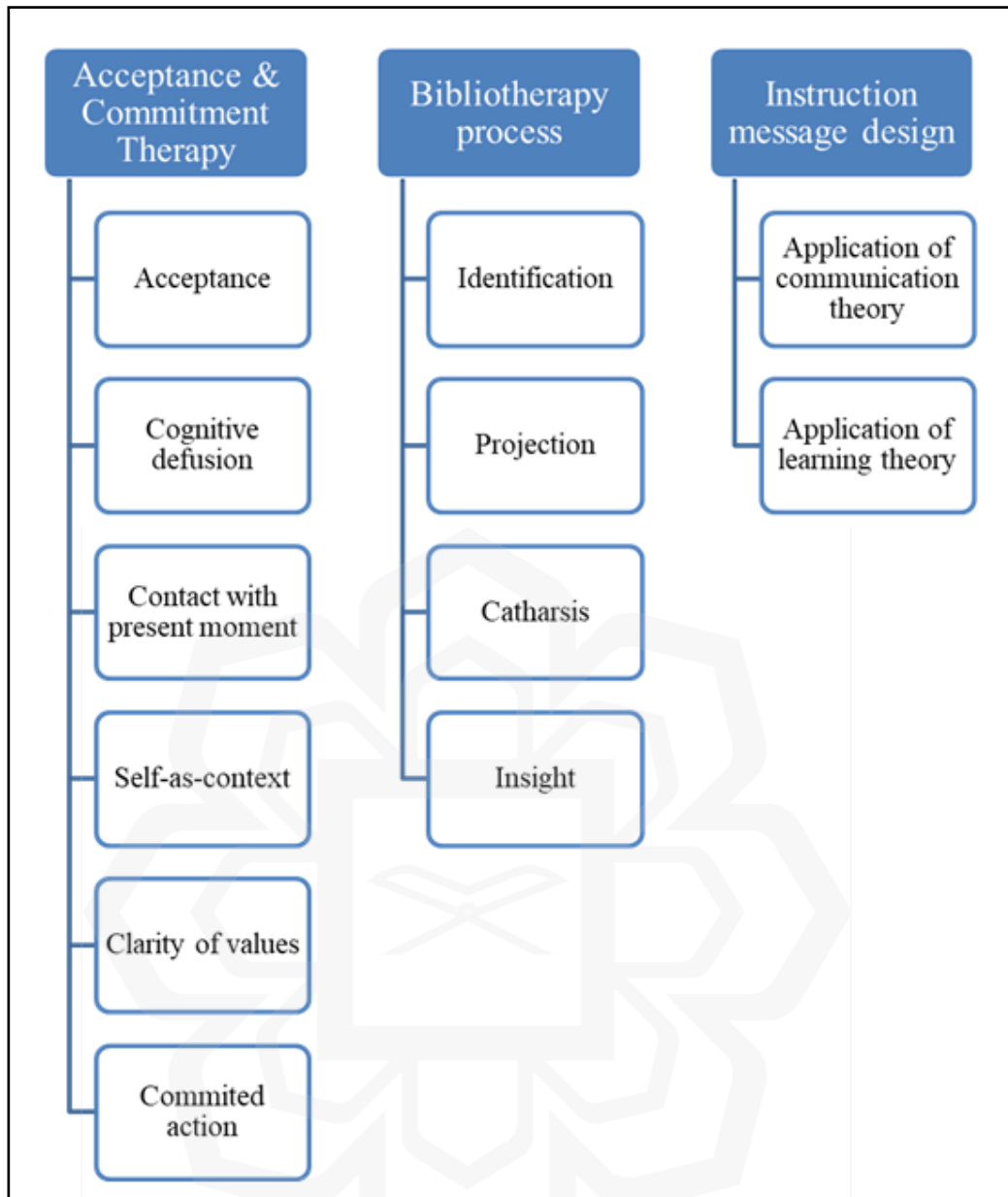


Figure 2.5 Theoretical Framework of the Study

#### 2.6.4.2 Proposed design principles

Based on the theoretical framework the following are the proposed design principles for the study research.

Table 2.9 Proposed Design Principles for the Study

No.	Domain	Main design principles	References
1	Acceptance and Commitment Therapy	1.1 Start with concept of valued living	(Ciarrochi, Bailey, et al., 2014; Lee-baggley, 2019)
		1.2 Explain “experiential avoidance” and “creative hopelessness” before introducing the concept of “acceptance”	(Merwin et al., 2023)
		1.3 Introduce all elements of psychological flexibility to readers : <ul style="list-style-type: none"> <li>• Acceptance</li> <li>• Cognitive defusion</li> <li>• Contact with present moment</li> <li>• Self-as-context</li> <li>• Clarity of values</li> <li>• Committed action</li> </ul>	(Hayes et al., 2012)
		1.4 For every psychological flexibility element, provide : <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	(Hayes et al., 2012b)
2	Process in bibliotherapy	2.1 Provide text that allow the process of identification to occur.	(Shrodes, 1950)
		2.2 Provide text that allow the process of projection to occur.	(Shrodes, 1950)
		2.3 Provide text that allow the process of catharsis to occur.	(Shrodes, 1950)
		2.4 Provide reflection exercises to help readers gain insight.	(Shrodes, 1950)

3	Instruction message design	<p>3.1 Apply communication theory in instructional design:</p> <ul style="list-style-type: none"> <li>• Design the layout using guidelines of text designs</li> <li>• Write organized messages which are in orderly state, rich in pattern and structure, highly interconnected and containing a good deal of redundancy.</li> <li>• Manage information load.</li> <li>• Use cueing techniques.</li> <li>• Use content-generated attention.</li> </ul>	(Hartley, 2004 ; Richey et al., 2011a)
		<p>3.2 Apply learning theory in instructional design</p> <ul style="list-style-type: none"> <li>• Message design strategies</li> <li>• Chunking</li> <li>• Mnemonics</li> <li>• Advance organizers</li> </ul>	(Richey et al., 2011b)

## **2.7 CONCEPTS TO DEVELOP A BIBLIOTHERAPY MODULE FOR SUSTAINED DIETARY BEHAVIOUR CHANGE**

Conceptual frameworks play a crucial role in elucidating, clarifying, and rationalizing methodological choices. According to Miles & Huberman, (1994), conceptual framework is as following:

A conceptual framework explains, either graphically or in narrative form, the main things to be studied- the key factors, constructs or variables – and the presumed relationships among them. (p.18)

This study employs Design and Developmental Research (DDR) and use ADDIE instructional design model as guideline for research milestones. Through DDR, this study aims to produce a bibliotherapy module for sustained dietary behaviour change using ACT theory.

Two of psychological process of ACT, namely “clarification of values” and “committed action” may require the readers to have some information about their values and behavioural actions. There are possibility that the readers need some examples or guidance in finding what values they really want to uphold and which dietary behaviour they are keen to give commitment. Thus, information on qur’anic values and healthy eating guidelines are added into the bibliotherapy module as optional chapters to be read by the readers.

Hence, four concepts will be presented in this section which are Design and Developmental Research (DDR), ADDIE instructional design model, qur’anic values and healthy eating guidelines.

### **2.7.1 Design and Developmental Research (DDR)**

#### ***2.7.1.1 DDR definition***

Richey and Klein (2014) define DDR as “The systematic study of design, development and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development”. These studies of instructional

product development also being referred as systems-based evaluation (Driscoll, 1984), formative research (van den Akker, 1999) and design-based research (Wang & Hannafin, 2005) . It is the nature of DDR to provide solution, thus this kind of research typically develop from problems encountered in practice.

### ***2.7.1.2 Types of DDR***

Studying the design and development process or studying the impact of design and development efforts are two distinctive different research. There are differences between doing design and development and studying the process involved. In DDR, there are two types of research which are type 1 and type 2. Type 1 is known as products and tools research while type 2 refers to research on design and development models (Richey & Klein, 2014).

Researchers doing type 1 study will document the entire design and development process that include analysis phase, design & development phase, implementation phase and evaluation phase. An example of type 1 study is the development of an online vocabulary game for beginning Arabic language learners at a Malaysian university (Sahrir & Yusri, 2012). This study conducted formative evaluation at each phases until the final product is produced. Alias and colleagues (Alias et al., 2015) also exemplified type 1 study which test the effectiveness of implementing Physics PTechLS module in a rural secondary school in Malaysia.

Type 2 DDR is known as model research. This type focuses on the design and development models and processes themselves (Richey & Klein, 2014). It studies the model development, model validation and use of models. For example, Harrison and colleagues (Harrison et al., 2018) investigate the effectiveness of the virtual reality training module to train medical students performing surgery.

### ***2.7.1.3 DDR and methodologies***

Design and development research employ quantitative and qualitative research methods and strategies (Richey & Klein, 2014). It is a blend of both methods due to projects complexities as well as multiple sources of issues to be addressed in the research. However, most of design and development research utilize qualitative strategies, hence making it dominant as compared to quantitative research (Richey & Klein, 2014). The qualitative methods include case studies, focus groups, participant interviews, field observation, think-aloud techniques and activity logs. On the other hand, the most frequently used quantitative methods are surveys and questionnaires.

### **2.7.2 Instructional design model: ADDIE framework**

In structuring their approach to design and develop a product, the novice researcher is highly advised to adhere to one of the recognised instructional design models (Ellis & Levy, 2010). This includes ADDIE and Dick and Carey models. Three aspects are often covered in this design and development research phase, regardless of the process model used. Generally speaking, the process involves creating a conceptual framework, developing the system architecture, and then creating a prototype for testing and assessment (Ellis & Levy, 2010).

The term "Analyze, Design, Develop, Implement, and Evaluate" (ADDIE) refers to a process used in instructional design to produce intentional learning events (Branch, 2009).

	<i>Analyze</i>	<i>Design</i>	<i>Develop</i>	<i>Implement</i>	<i>Evaluate</i>
<b>Concept</b>	Identify the probable causes for a performance gap	Verify the desired performances and appropriate testing methods	Generate and validate the learning resources	Prepare the learning environment and engage the students	Assess the quality of the instructional products and processes, both before and after implementation
<b>Common Procedures</b>	<ol style="list-style-type: none"> <li>1. Validate the performance gap</li> <li>2. Determine instructional goals</li> <li>3. Confirm the intended audience</li> <li>4. Identify required resources</li> <li>5. Determine potential delivery systems (including cost estimate)</li> <li>6. Compose a project management plan</li> </ol>	<ol style="list-style-type: none"> <li>7. Conduct a task inventory</li> <li>8. Compose performance objectives</li> <li>9. Generate testing strategies</li> <li>10. Calculate return on investment</li> </ol>	<ol style="list-style-type: none"> <li>11. Generate content</li> <li>12. Select or develop supporting media</li> <li>13. Develop guidance for the student</li> <li>14. Develop guidance for the teacher</li> <li>15. Conduct formative revisions</li> <li>16. Conduct a Pilot Test</li> </ol>	<ol style="list-style-type: none"> <li>17. Prepare the teacher</li> <li>18. Prepare the student</li> </ol>	<ol style="list-style-type: none"> <li>19. Determine evaluation criteria</li> <li>20. Select evaluation tools</li> <li>21. Conduct evaluations</li> </ol>
	<i>Analysis Summary</i>	<i>Design Brief</i>	<i>Learning Resources</i>	<i>Implementation Strategy</i>	<i>Evaluation Plan</i>

Figure 2.6 ADDIE common procedure and concepts (Branch, 2009)

### 1. Analysis stage (A)

Developmental research starts with preliminary investigation. An extensive and thorough preliminary examination of the tasks, issues, and context is conducted, and this inquiry includes looking for more precise and explicit links between that analysis and current body of knowledge in literature (Van Den Akker, 1999). Typical activities include literature reviews, expert consultations, examination of potential examples that are available for relevant purposes, and case studies of current practises to better define and comprehend needs and issues in intended user contexts (Van Den Akker, 1999).

During the analysis phase, the common procedures according to Branch (2009) include 1) Validate the performance gap; 2) Determine instructional goals; 3) Analyse learners ; 4) Audit available resources; 5) Recommend potential delivery systems; 6) compose a project management plan. The first procedure requires empirical data which can be gathered from interviews. Only performance gap which are caused by lack of knowledge and skill can be consider as reason to develop an instruction (Branch, 2009). Such instruction aimed to close the performance gap.

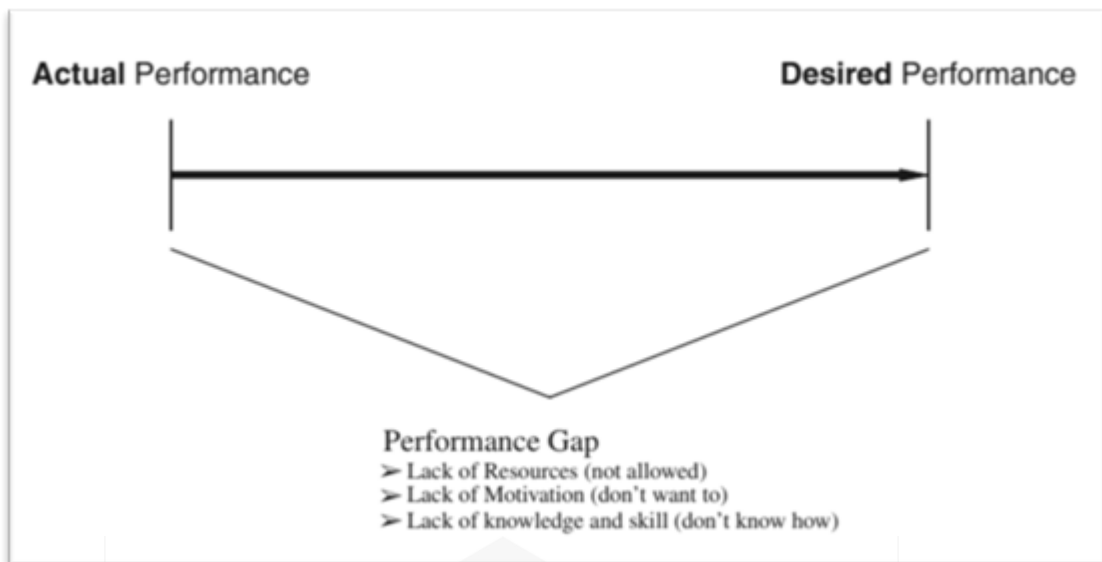


Figure 2.7 Three main causes for a performance gap (Branch, 2009)

## 2. Design stage (D)

For the “Design” stage of ADDIE, the instructional developer creates a thorough plan of instruction, choosing the instructional strategies as well as the media and methods to use (Allen, 2006). During this stage, the suitability of pre-existing instructional materials for the particular lesson being developed is assessed (Allen, 2006). The developers also create the learning objectives during this step, test them, and design the lesson.

Design research methodologies necessitate significant and ongoing cooperation between academics and industry professionals. It combines the discovery of reusable design principles with the creation of solutions to real-world issues in educational settings (Reeves, 2006). Design research differs from other types of research in that it calls for practitioners and researchers to work together to identify real problems in teaching and learning, develop prototype solutions based on established design principles, and test and improve both the prototype solutions and the underlying design principles until everyone is satisfied with the results (Reeves, 2006). The very nature of design research ensures that progress will be made in terms of, at the very least, clarification of the issues facing teachers and learners, and, ideally, the creation and adoption of solutions in tandem with the elucidation of sound

design models and principles (Reeves, 2006). Design research is not an activity that a single researcher can conduct in isolation from practise.

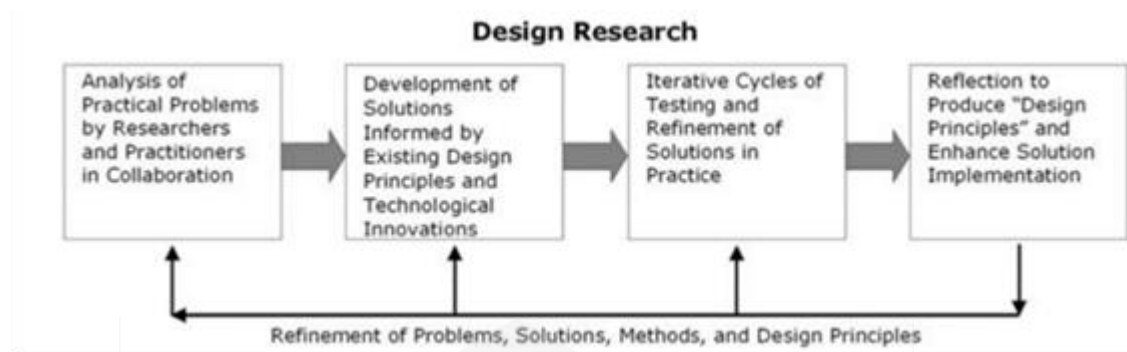


Figure 2.8 Design research approach in educational technology research (Reeves, 2006)

Design knowledge is the main sort of knowledge sought in educational technology because it is first and mainly a design field (Reeves, 2006). It is social, active, and contextual. Solving issues with teaching, learning, and performance as well as extracting design principles that can guide future development and implementation decisions should be the primary research objectives of education technology as a design discipline (Reeves, 2006).

One characteristic of this type of research is theoretically embedded design (van den Akker, 1999). The design choices must have theoretical rationale. Following an empirical evaluation of the intervention's effectiveness, specific feedback is given regarding claims made in the design justification related to the intervention's fundamental qualities (substantive design principles) (van den Akker, 1999). This theoretical formulation can make the justification more "transparent" and "plausible."

Two outputs are expected in design research which are research-based interventions designed for complex problems in educational practice and well-articulated design principles. These design principles offer insights into the purpose or function of the intervention, its primary characteristics, guidelines for designing the intervention, its implementation conditions and theoretical and empirical arguments for the characteristics and procedural guideline (Nieveen & Folmer, 2013). These

design principles benefit the researchers, educational designers, future users and policy makers. It serve several purposes as the following.

Table 2.10 Purpose of design principles for the target groups (Nieveen & Folmer, 2013)

<b>Target groups</b>	<b>Purpose of design principles</b>
The researchers	These principles demonstrate the contribution of design research to the body of knowledge by providing details on the operation of the intervention, its effects, and an explanation of its underlying mechanisms.
The educational designers	These principles offer a wealth of knowledge for creating similar solutions for comparable environments.
The future users	The principles offer knowledge necessary for choosing and implementing interventions in the unique target circumstance and give insights into the necessary implementation conditions.
The policy makers	These design principles aid in the formulation of research-based decisions for addressing the resolution of challenging educational issues.

### **3. Development stage (D)**

Next, the student and instructor lesson materials are created throughout the development process of ADDIE (Allen, 2006). The implementation plan is updated as the last step in this development phase (Allen, 2006). As each unit is prepared during this phase, instructional developers validate the accompanying instructional materials. Any shortcomings that might be found are fixed.

#### **4. Implementation stage (I)**

The “I” of ADDIE is implementation stage. The design and development of the instructional system has prepared the real system for operation during the implementation stage (Allen, 2006). Hence, the teaching system is put into operation at this phase. Operational assessment activities offer participant performance feedback from the field .

During this stage, the intervention's applicability and efficacy for the targeted target group in actual user scenarios are demonstrated with clear empirical evidence (Akker, 1999). Given the large range of potential treatments and situations, many different markers for "success" need be taken into account .

#### **5. Evaluation stage (E)**

The last acronym “E” is referring to evaluation. Throughout the whole cycle of the instructional system, evaluation is a continuous activity that starts at the analysis phase (Allen, 2006). It is the process of obtaining information to determine the worth or value of the instruction, as well as its advantages and disadvantages (Tessmer, 1993). The instruction is revised to increase its efficacy and attractiveness based on the weaknesses and strengths that have been recognised (Tessmer, 1993).

There are two types of evaluation which are formative evaluation and summative evaluation. The function of formative evaluation is to improve while the function of summative evaluation is to proof (Nieveen & Folmer, 2013). This study aims to improve the product so it focuses on on exposing the module’s flaws while it is still being developed in order to produce solutions for improving it. Its definition based on scholars is as following:

A systematically performed activity (including research design, data collection, data analysis, reporting) aiming at quality improvement of a prototypical intervention and its accompanying design principles. (Nieveen & Folmer, 2013)

In order to increase the instruction's effectiveness and attractiveness, "formative evaluation" assesses the strengths and shortcomings of the instruction as it is still in the developing stages (Tessmer, 1993). To conduct the evaluation, data on the instruction are gathered from various sources utilising a variety of data gathering techniques and tools . This includes expert review, one-to-one evaluation, small group evaluation and end-user testing.

### 2.7.3 Qur'anic values to guide eating behaviour

For Muslim believers, the content of Qur'an is guidance for all aspects of life. It functions as basic foundation of any study. Hence, the topic of Qur'anic guidance related to values to guide eating behaviour is discussed in this subtopic.

After screening and eligibility analysis, the final selection are 30 verses which derived from topic 1 and topic 2 (refer table 2.2). These two topics were selected because both answer the Qur'an review research question "What are the Qur'anic values that guide human's eating behaviour?" Four themes of values were generated according to the key words of selected verses as well as the context of the verses.

Table 2.11 Values that guide eating behaviour according to Qur'anic verses

No.	Surah	Surah no.	Verse no.	Values			
				Allah's love	Faith (a call to believers)	Gratitude	Servitude to Allah
1	Al-Baqarah	2	168				/
2	Al-Baqarah	2	172		/	/	/
3	Al-Baqarah	2	187				/
4	Al-Maidah	5	3				/
5	Al-Maidah	5	4				/
6	Al-Maidah	5	88		/		/
7	Al-An'am	6	118		/		/
8	Al-An'am	6	119				/
9	Al-An'am	6	121				/

10	Al-An'am	6	141	/		/	/
11	Al-An'am	6	142			/	/
12	Al-Araf	7	31	/			/
13	An-Nahl	16	5			/	
14	An-Nahl	16	14			/	
15	An-Nahl	16	114			/	/
16	Toha	20	54				/
17	Toha	20	81			/	/
18	Al-Hajj	22	28			/	/
19	Al-Hajj	22	36			/	/
20	Al-Mukminun	23	19			/	
21	Al-Mukminun	23	20			/	
22	Al-Mukminun	23	21			/	
23	An-Nur	24	61				/
24	As-Sajdah	32	27			/	
25	Fatir	35	12			/	
26	Yasin	36	33			/	
27	Yasin	36	35			/	
28	Yasin	36	72			/	
29	Ghafir	40	79			/	
30	Al-Mulk	67	15			/	/
	Frequency			2	3	19	19

Overweight and obese Muslim women face challenges as they play their role in family and society. Various expectation from people results in dissatisfaction as people have different standard of values. To be at peace, one ultimate solution is for one to hold solely on the values from God. God sent down Al-Qur'an to mankind through His messenger prophet Muhammad s.a.w. as guidance.

The Qur'an is a book of guidance that sheds light on every aspect of human life, including the act of eating. Specifically, in the context of eating, several value-related concepts emerge from the keyword search (أكل), which means "to eat." The four Qur'anic values that guide human eating behaviour and will be discussed here are gratitude to Allah SWT, love for Him and the desire to be loved by Him, faith in Him, and a sense of servitude to God by becoming His devoted servant.

## 1. Gratitude

Food sources such as livestock, vegetables, fruits, and the resources of the sea serve as signs for humanity to reflect upon, encouraging a deeper sense of gratitude. In *Surah Yasin*, Allah calls attention to the animals He created for human benefit (Qur'an, 36:71-75). These include livestock that people can manage, ride, consume, and use in many other ways. The verse questions why some still fail to show gratitude even when these blessings are clear and abundant.

He also reminds humankind of the provisions found in the sea. *Surah al-Nahl* explains that the ocean offers many benefits, including edible marine life, materials for adornment, and a pathway for ships to travel in search of livelihood (Qur'an, 16:14). Each of these blessings invites reflection on His generosity. *Surah Fatir* strengthens this reminder by presenting the contrast between sweet water and salty water (Qur'an, 35:12). Despite their differences, both provide fresh food, items of adornment, and travel routes for ships. These verses guide humans to recognise His bounty and nurture gratitude.

Gratitude is a powerful value in Islam and becomes a motivating force for obedience to God. One expression of this obedience relates directly to food. In *Surah al-Baqarah*, believers are instructed to consume what is good and permissible as an act of gratitude and worship (Qur'an, 2:172). In the context of overweight and obesity, the quality and type of food consumed are important for maintaining a balance between energy intake and energy expenditure. When intake exceeds expenditure, the body stores excess energy as fat, which leads to weight gain. A Muslim who values gratitude as part of his spiritual practice would aim to follow the

divine instruction by choosing food that is good and lawful. On the other hand, neglecting this responsibility may indicate a lack of gratitude, shown through heedlessness and disobedience towards His commands.

## 2. Love

In the Qur'an, the behaviour of eating in excess, which contributes to overweight and obesity, is linked to the value of loving Allah. Allah instructs Muslims to avoid overindulgence in food and makes it clear that He dislikes those who behave wastefully. In *Surah al-An'am*, Allah reminds humans that although He provides abundant produce such as gardens, fruit trees, olives, and pomegranates, they are required to enjoy these blessings responsibly without engaging in wasteful behaviour, because God does not like those who waste food (Qur'an, 6:141).

Another reminder appears in *Surah al Araf*, where Allah instructs the children of Adam to dress well for worship and to eat and drink what He has permitted, yet not to engage in extravagance (Qur'an, 7:31- 32). The verse emphasises that Allah does not like those who exceed proper limits and clarifies that the adornments and nourishment He provides are lawful for believers.

A similar message is conveyed in *Surah al-Maidah*, where believers are told not to forbid the good things that Allah has made lawful to them, and at the same time not to go beyond the limits in their behaviour (Qur'an, 5:87-88). Allah does not love those who exceed the boundaries He has set, and humans are encouraged to consume what is lawful and good while remaining conscious of Him.

A sincere Muslim who values the love of Allah would not want to be among those whose actions are disliked by Him. In contrast, those who do not appreciate His love may overlook the seriousness of excessive eating. Therefore, an intervention for overweight and obese Muslim needs to support them in developing an awareness of His love and nurturing the value of loving Allah. The cultivation of gratitude and love towards Allah forms an essential foundation for weight management interventions for Muslims.

### 3. Faith (believer)

Only those who truly believe and possess faith are promised entry into paradise. Therefore, it is essential for every Muslim to understand the path that leads a person to genuine faith. Being a believer is not merely a verbal declaration. Rather, proving one's belief requires responding to the call of Allah and fulfilling His commands.

In the Qur'an, Allah often addresses the believers with the expression "O you who have believed." This form of address serves as a reminder that believers should respond with obedience to whatever instruction or prohibition follows. Among the many verses that begin with this expression, one relates directly to the act of eating. In *Surah al Baqarah*, Allah instructs believers to consume what is good from the provisions He has granted and to show gratitude to Him (Qur'an, 2:172). This indicates that choosing good food is not only a matter of health or preference, but also a requirement connected to faith itself. A person who believes will respond to this instruction by selecting what is wholesome and beneficial.

Another instruction appears in *Surah al Maidah*, where Allah reminds believers to eat what is lawful and good and to remain conscious of Him (Qur'an, 5:88). This guidance emphasises that consuming lawful and pure food is a sign of true belief. Similarly, in *Surah al-Anam*, Allah encourages believers to eat meat over which His name has been mentioned (Qur'an, 6:118). Doing so reflects acceptance of His guidance and trust in His revelation.

For Muslims who believe, eating is not simply an everyday habit. Beyond its physical function, it becomes an act that reflects one's faith and serves as evidence before Allah that a person is sincerely committed to His teachings.

#### 4. Servitude to Allah swt

Eating what is lawful and good from the provision given by Allah is regarded as an act of worship, as indicated in *Surah al-Baqarah* (Qur'an, 2:172). This practice reflects obedience and servitude towards Allah. The verse calls on believers to consume from the good things He has provided and to express gratitude to Him, showing that proper conduct in eating is part of sincere worship.

This act is also connected with consciousness of Allah, as mentioned in *Surah al-Baqarah* (refer Qur'an, 2:187) and *Surah al-Maidah* (refer Qur'an, 5:88; 5:4). In these verses, believers are reminded to fear Allah while consuming what He has made lawful and good. The instruction encourages mindfulness and accountability while engaging in something as ordinary as eating.

The Arabic command *كُلُوا*, meaning "all of you, eat," appears in many verses. These verses guide believers with instructions or prohibitions related to food, such as in *Surah al-Baqarah* (refer Qur'an, 2:168; 2:172; 2:187), *Surah al-Maidah* (refer Qur'an, 5:4), *Surah al-An'am* (refer Qur'an, 6:118; 6:121; 6:141; 6:142), *Surah al-Araf* (refer Qur'an, 7:31), *Surah al-Nahl* (refer Qur'an, 16:114), *Surah Taha* (refer Qur'an, 20:54; 20:81), and *Surah al-Hajj* (refer Qur'an, 22:28; 22:36), as well as *Surah al-Mulk* (refer Qur'an, 67:15). Through these commands and restrictions, Allah instructs His servants on how to obey and demonstrate devotion to Him. For example, *Surah Taha* reminds humans to eat from what He has provided on earth and to reflect on the signs of His power and wisdom (Qur'an, 20:54).

Other verses offer guidance on the manner of eating in accordance with His will, such as *Surah an-Nur* (refer Qur'an, 24:61). This verse explains the social etiquette of eating, including situations where one may eat in the homes of family members or trusted individuals, and clarifies that there is no blame whether people eat together or separately. It also teaches the importance of offering greetings of peace when entering a home, showing that eating is intertwined with manners and spiritual awareness.

For Muslim believers, eating is not simply part of daily routine. It becomes an action of worship when carried out in accordance with the commands and prohibitions of Allah. By following His guidance on what to eat and how to eat, a believer demonstrates true servitude and obedience to Allah.

### **Qur'anic values to guide eating behaviour in the bibliotherapy module**

Placing Qur'anic guidance within the context of sustained dietary behaviour change requires clarity of values among Muslim women. One's relationship with food should be shaped by a sense of gratitude and love toward the Provider. This connection can be cultivated through intentional reflection on the food one consumes or through practising mindful eating. By acknowledging His bounties, a believer develops a sense of gratefulness and obedience to God. At the same time, holding firmly to Qur'anic values serves as a constant reminder not to be among those whom Allah dislikes. These orientations may lead to sustainable healthy eating behaviour, such as consuming only what is lawful and wholesome and avoiding excessive intake.

In ACT, clients are empowered with effective behavioural coping responses that enable them to commit to value-driven actions. Clarity of values motivates individuals to make decisions that align with the values they uphold. Without such clarity, individuals are at risk of becoming entangled in emotions and thoughts that may lead to harmful behaviours, such as emotional eating. Since values are important motivational elements that influence behaviour, this study includes Qur'anic values as optional reading material to support healthy eating behaviour.

The four Qur'anic values relevant to guiding eating behaviour are as follows:

1. A sense of gratitude to Allah SWT.
2. A sense of love for Allah SWT and the fear of being disliked by Him.
3. Faith or belief in Him.
4. A sense of servitude to God as His servant.

#### **2.7.4 Healthy eating guidelines**

Healthy eating habits involve the timing of meals, the composition of one's diet, and the portion sizes consumed. Malaysian Dietary Guidelines 2020 (National Coordinating Committee on Food and Nutrition (NCCFN), 2021) provide information about right food choice and right amount of intake tailored to people living in Malaysia. These guidelines are relevant for all healthy adult Malaysians, including those dealing with common health issues such as overweight. They do not pertain to individuals requiring specialized dietary recommendations for medical reasons.

##### ***2.7.4.1 Right food choice***

A balanced diet consists of a mix of foods that supply an appropriate blend of nutrients. Maintaining health requires the consumption of diverse food types in varying quantities. The essential balance of nutrients vital for good health can be achieved by incorporating a range of healthy foods into one's diet, including fruits, vegetables, grains, fish, meat, legumes, and dairy products (NCCFN, 2021).

A food pyramid serves as a visual aid to assist in planning your daily food intake to achieve a healthy diet. It is designed to offer guidance on the types and quantities of food that can be consumed together to ensure a balanced diet. Typically, a food pyramid comprises four tiers representing five food groups. A food group categorizes foods with comparable nutrient profiles and functions. Foods within these groups typically share similar calorie, carbohydrate, protein, and fat contents. There are five primary food groups, namely vegetables, fruits, rice, other cereals, whole grain cereal-based products, and tubers; fish, poultry/eggs, meat, and legumes; and milk and milk products.

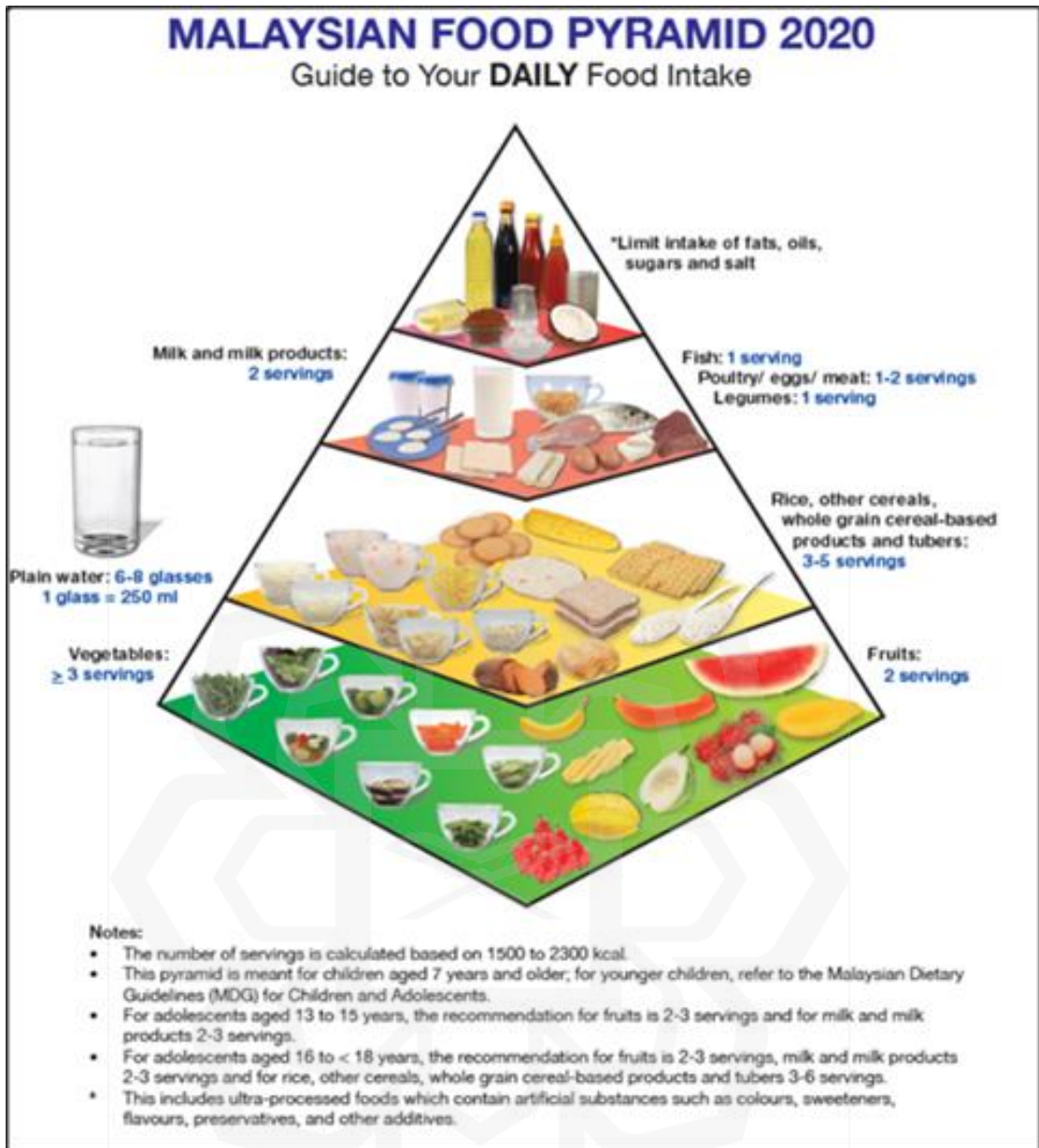


Figure 2.9 Malaysian Food Pyramid 2020

The intake of processed and ultra-processed food such as fish ball, meat balls, salami and sausages should be limited. Instead, prepare or choose natural ingredients for cooking.

#### ***2.7.4.2 Right amount of intake***

An adequate diet supplies sufficient energy, essential nutrients, and fiber to sustain an individual's well-being. In the Malaysian Food Pyramid, serving size refers to the suggested quantity of foods to be consumed daily, measured in household units such as cup, plate, bowls, tablespoon, teaspoon, and glass. The first key recommendation of the first Malaysian Dietary Guideline (MDG) key message is to choose daily food intake based on recommended number of servings in the Malaysian Food Pyramid 2020.

The second key recommendation is to eat breakfast, lunch and dinner as recommended by the Malaysian Healthy Plate. The Malaysian Healthy Plate is a visual aid designed to illustrate the recommended portions of food from each food group for a balanced and healthy meal. It follows the principle of quarter, quarter, half to indicate the proportions of different food groups to be consumed. This tool serves to simplify the recommendations outlined in the Malaysian Dietary Guidelines and Malaysian Food Pyramid, assisting Malaysians in adopting healthy eating habits through meal planning. The recommended practice is to fill the first quarter of the plate with options such as rice, noodles, breads, grains, cereal products, or tubers. The second quarter of the plate should then be filled with choices like fish, poultry, meat, or legumes. Finally, the remaining half of the plate should consist of vegetables and fruits. Additionally, it's advised to accompany the meal with plain water or unsweetened beverages, as well as milk or dairy products.

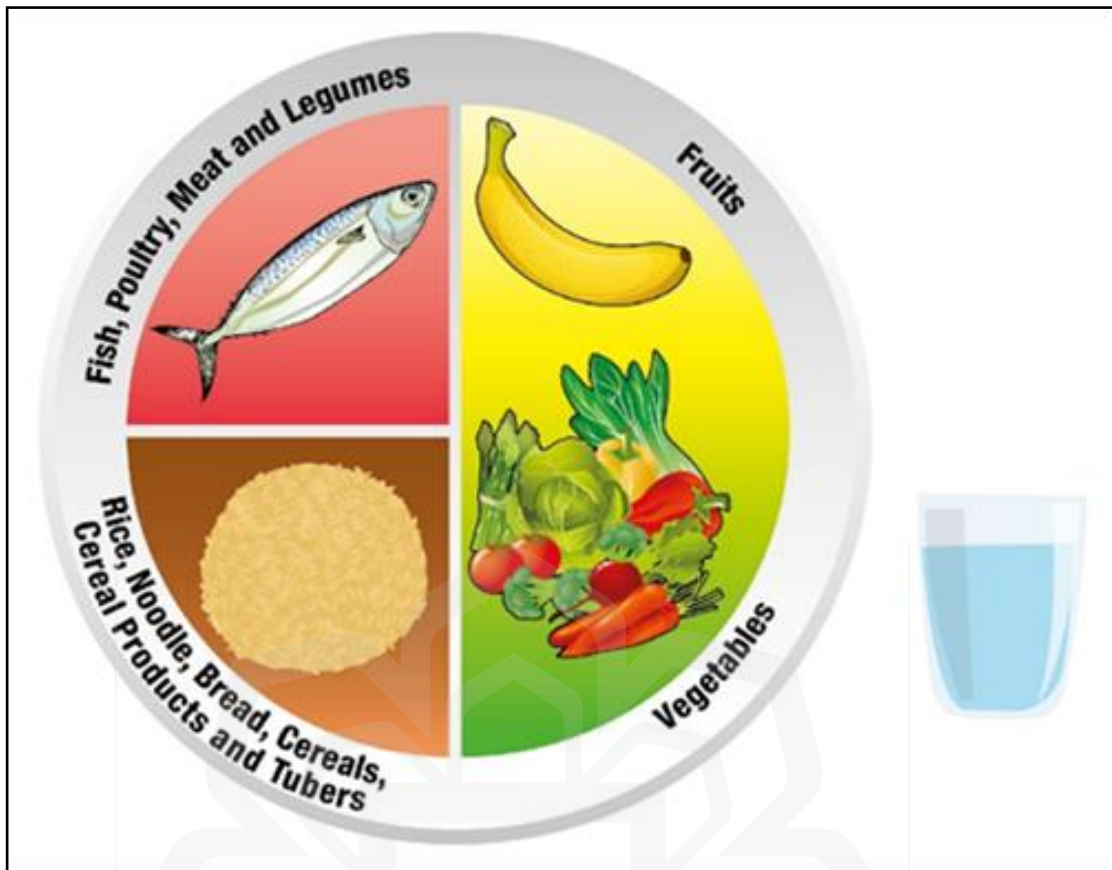


Figure 2.10 Malaysian Healthy Plate

#### ***2.7.4.3 Right timing of meals***

The previous sections have examined what to eat and how much to eat. Equally important, however, is the question of when to eat. The timing of meals plays a vital role in the management of obesity (Ahluwalia, 2022), as it influences the body's metabolic processes. In particular, meal timing is closely linked to the circadian clock, which governs various physiological functions and is essential for maintaining metabolic health (Kessler & Pivovarova-Ramich, 2019). Hence, chrononutrition, an emerging field that explores the connection between circadian rhythms, nutrition, and metabolism, has garnered growing interest in recent years. The term "chrononutrition" refers to the concept of aligning meal timing with the body's circadian rhythms (Kessler & Pivovarova-Ramich, 2019). It underscores the notion that the timing of food consumption is just as important as the quality and quantity of food consumed.

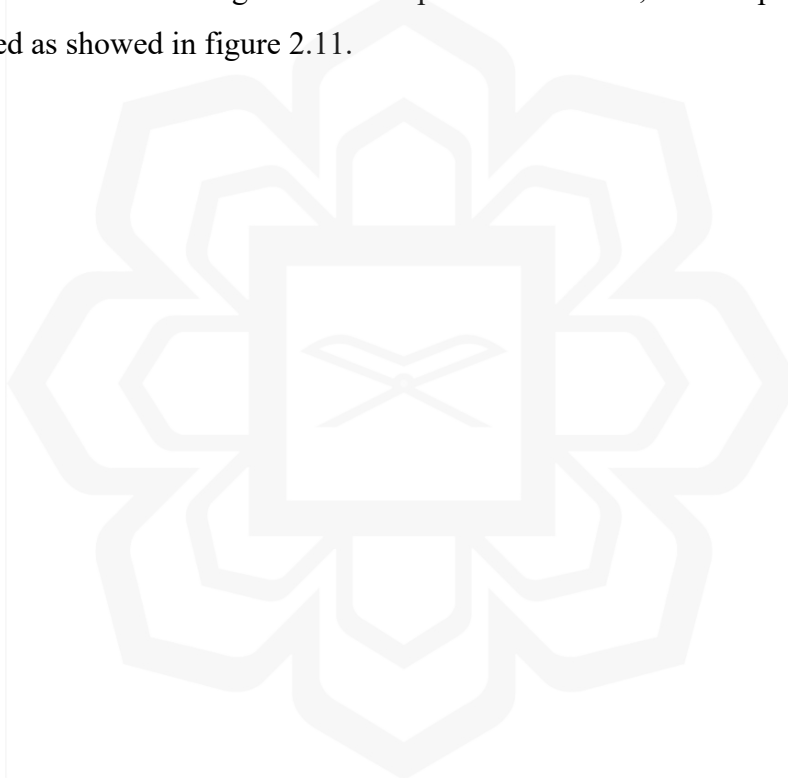
In mammals, the circadian clock comprises a master clock located in the suprachiasmatic nucleus (SCN) of the hypothalamus. It is synchronized by light/dark signals, and peripheral clocks regulated by the master clock through nervous and humoral pathways. Peripheral clock oscillators are present in various tissues, including the liver, heart, kidney, intestine, skeletal muscles, adipocytes, and peripheral blood cells. Food intake acts as an external cue that synchronizes the circadian clock, primarily influencing peripheral circadian clocks (and to a lesser extent, the central clock). Consequently, the daily rhythms of metabolism result from a complex interplay between the endogenous autonomous clock, exposure to light/dark cycles, and patterns of fasting/feeding. Disruption of the genetic clock can result in dysregulation of glucose and lipid metabolism, leading to the onset of obesity, type 2 diabetes, and related metabolic disorders.

Due to the close relationship between the circadian clock and metabolism, meal timing plays a significant role in metabolic regulation. Mice, being nocturnal animals, usually consume approximately 70–80% of their daily food intake during the dark phase (Kessler & Pivovarov-Ramich, 2019). Epidemiological studies in humans have demonstrated that individuals who consume their meals at "wrong" or unusual times of the day, often due to factors like shift work or chronic jet lag, exhibit a higher risk of developing obesity, type 2 diabetes, and cardiovascular diseases (Antunes et al., 2010; Jiang & Turek, 2017). Additionally, in humans, the timing of the main meal throughout the day has an impact on the risk of obesity and the effectiveness of weight loss interventions. Individuals who eat their main meal later in the day tend to lose less weight on a reduced-calorie diet compared to those who eat earlier (Garaulet et al., 2013). Moreover, individuals consuming a high-calorie breakfast often experience greater weight loss and lower levels of daily glucose, insulin, ghrelin (hunger hormone) concentrations, and hunger scores compared to those consuming the same high-calorie intake during dinner (Jakubowicz et al., 2013). While some epidemiological studies have not consistently found an association between evening eating and BMI and metabolic parameters (Aljuraiban et al., 2015), most studies suggest that late or delayed eating is linked to weight gain, disruptions in energy expenditure, and abnormalities in circadian rhythms of appetite, stress, and sleep hormones (Allison & Goel, 2018). Night-eating syndrome, characterized by

consuming a significant portion of daily food intake during late hours, is particularly associated with obesity (Gallant et al., 2012). Furthermore, experimental studies manipulating eating timing in humans have shown that delayed eating can lead to metabolic dysfunction, while daytime eating generally improves these parameters (Lecheminant et al., 2013; Wehrens et al., 2017).

### **2.7.5 Conceptual framework**

Combining the main theories, fundamental guide from the Qur'an, healthy eating guidelines as well as design and developmental research, a conceptual framework is structured as showed in figure 2.11.



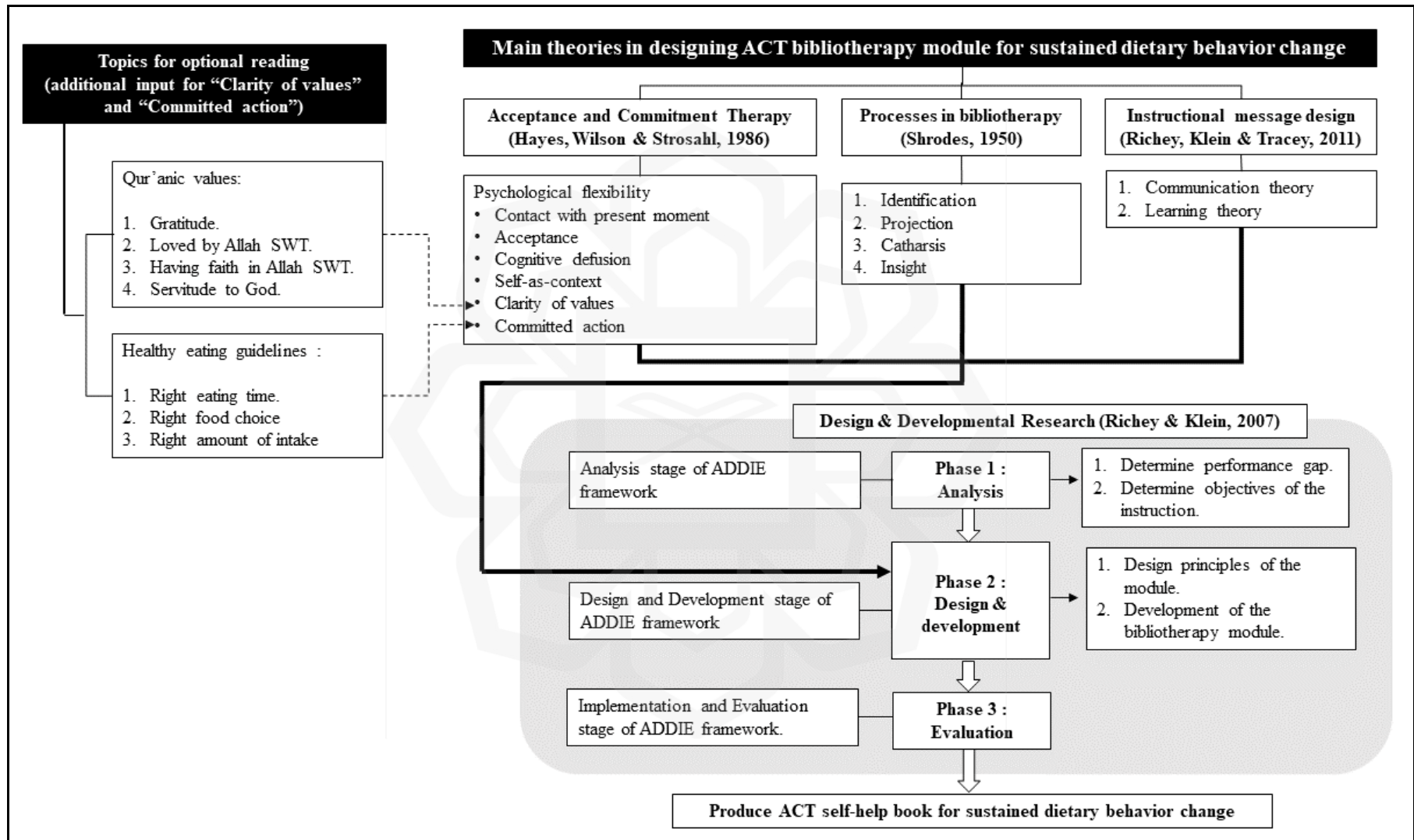


Figure 2.11 Conceptual framework of the study

## 2.8 DESIGN AND DEVELOPMENT OF AN ACT-BASED BIBLIOTHERAPY MODULE FOR SUSTAINED DIETARY BEHAVIOUR CHANGE

To develop a feasible and effective bibliotherapy module (self-help book), the quality aspects of each phases has to be evaluated. The first phase which is the analysis phase, researcher evaluate whether there are needs to develop the intervention. The second phase, the design and development phase, the researcher needs to evaluate the validity and practicality of the module. Finally, in evaluation phase, the researcher needs to evaluate the practicality and effectiveness of the book. Table 2.12 illustrate the quality criteria across DDR process.

Table 2.12 The quality criteria across DDR phases (Nieeven, 1999)

DDR phases	Quality aspects
Analysis	Relevancy – There is a need to develop the intervention.
Design & development	Validity : The intended module <ul style="list-style-type: none"> <li>• Is based on state-of the-art knowledge (content validity)</li> <li>• All components are consistently linked to each other (construct validity)</li> </ul> Practicality <ul style="list-style-type: none"> <li>• There is consistency between intended and perceived module. For example, the counselors feel that it is usable and easy to use which is compatible with the developers' intentions.</li> </ul>
Evaluation	Practicality <ul style="list-style-type: none"> <li>• There is consistency between intended and operational module. For example, the clients feel that it is usable and easy to use which is compatible with the developers' intentions.</li> </ul> Effectiveness <ul style="list-style-type: none"> <li>• The clients appreciate the intervention and desired learning takes place.</li> <li>• There is consistency between intended and experiential as well as intended and attained outcome.</li> </ul>

### **2.8.1 The Needs Analysis for Developing an ACT-Based Bibliotherapy Module for Sustained Dietary Behaviour Change**

Previous studies have explored the challenges or barriers to sustain dietary behaviour change among young adults. For example, some university students expressed their challenges in maintaining the new diet regime. Issues like poor self-control and psychological states of the participants are some challenges faced by the obese female students in one of the university in Malaysia (Ibrahim & Rais, 2019). Participants encountered distinct self-control challenges, including the consumption of big portions in each meal, opting for high-calorie and low-nutrient foods, engaging in frequent irregular meal times, snacking outside designated meal times, and grappling with sabotaging thoughts (Ibrahim & Rais, 2019). Hence, counselors, dietitians, or healthcare providers are suggested to explore counselling techniques aimed at empowering clients to effectively manage their thoughts and emotions. This approach is crucial for enhancing their self-efficacy in practicing self-control.

Another study in Malaysia found that overweight individuals demonstrated notably lower preferences for low-fat sensations but exhibited significantly higher preferences for high-fat sensations, in contrast to individuals with a normal Body Mass Index (BMI) (Y. F. Tan et al., 2020). In particular, individuals classified as cognitive restrainers exhibited a preference for low-fat sensations, whereas high-fat sensations were more favored among those identified as uncontrolled and emotional eaters (Y. F. Tan et al., 2020). In light of this, enhancing “acceptance” skill of ACT among the overweight would make them more capable of making eating choices that in line with their values as compared to merely following the urge of craving or emotional turbulence.

Stress is common issue among young adults in the university. The link between perceived stress and dietary risk was mediated by uncontrolled and emotional eating, and this pattern held true for both males and females university students (Du et al., 2022). Based on the researchers' findings, it is suggested that students in higher education could benefit from interventions aimed at reducing uncontrolled and emotional eating, particularly during periods of heightened stress (Du et al., 2022). Thus, improving their psychological flexibility through ACT intervention may help university students manage emotional turbulence in a better or healthier way.

It is common to see people who had lose weight regain their lost weight again. The synthesized model that Greaves and colleagues (2017) developed suggests that adhering to the behaviour modifications necessary for sustaining weight loss creates psychological "tension." This tension arises from the necessity to override established habits and the conflict between the new behaviours and the fulfillment of psychological needs. Thus, they propose that achieving successful weight maintenance requires effectively managing this psychological tension through self-regulation, renewing of motivation and managing external influences (Greaves et al., 2017). Resolving this tension can also be accomplished by altering habits, discovering non-obesogenic approaches to address needs, and possibly through a shift in self-concept (Greaves et al., 2017). In light of this findings, assisting overweight or obese people by improving their psychological flexibility through ACT model can be a long-lasting solution.

## **2.8.2 Design and development of a self-help book for sustained dietary behaviour change**

### ***2.8.2.1 Previous design and developmental study of self-help book***

There are limited number of previous studies which focus on developing a self-help material related to eating behaviour phenomena. The documented design and developmental process of self-help materials are largely of digital platform such as website and mobile app.

One of them are the work of Richards and colleagues (2022). Through 2 phases of work in developing a web-based guided self-help, Richards and colleagues include few elements of ACT-based activities as design principles in Supporting Weight Management (SWiM) program (Richards et al., 2022). Developing the ability to handle high-risk situations for lapses, forming new beneficial habits, breaking old unhelpful ones, and managing interpersonal relationships and their impact on weight management are just a few of the essential components of SWiM's targeted sessions on key determinants of weight loss maintenance (Richards et al., 2022).

Asbjørnsen and colleagues (2022) combine Persuasive System design principles and behaviour change techniques in designing and developing eCHANGE, a platform that support long-term weight loss maintenance. There are four main components of intervention namely 1) Week Plan, 2) My Overview, 3) Knowledge and Skills, and 4) Virtual Coach and Smart Feedback System (Asbjørnsen et al., 2022). To foster a healthy way of living and sustain ongoing behavioural changes for weight maintenance, the design features incorporated PSD (Persuasive Systems Design) principles like tailoring, personalization, self-monitoring, reminders, rewards, rehearsal, praise and suggestions (Asbjørnsen et al., 2022). Additionally, Behaviour Change Techniques (BCTs) from goal setting, planning, feedback and monitoring, social support, repetition and substitution, shaping knowledge, natural consequences, associations, antecedents, identity, and self-belief clusters were combined and integrated into the overall framework (Asbjørnsen et al., 2022)

Solbrig and colleagues explore the users' interest in identifying required component of a self-help mobile app among those trying to lose weight. Among the group of people trying to lose weight, all stated that they would like motivation-boosting apps to help them increase their physical activity and lose weight (Solbrig et al., 2017). They didn't appreciate apps that required a lot of user interaction or ones that counted calories (Solbrig et al., 2017). Every group requested the inclusion of behavioural components like goal-setting and goal-reviewing, along with the option to customise the app by adding photo reminders and selecting the best times to get goal reminders (Solbrig et al., 2017).

#### ***2.8.2.2 Methods to evaluate the design and development of a module***

Atkins and Michie (2015) described the guide in designing interventions to change eating behaviours using the Behaviour Change Wheel (BCW). The COM-B model is at the center of the wheel, with nine intervention functions forming the inner ring and seven policy categories making up the outer ring (Atkins & Michie, 2015). Intervention designers have three main tasks which are (1) understanding the behaviour; (2) identifying intervention options; and (3) determining content and implementation options. Table 2.9 summarizes actions to be done for each main tasks.

Table 2.13 Behaviour change wheel steps according to main tasks

<b>Main tasks</b>	<b>Behaviour Change Wheel step</b>
Understand the behaviour	1. Define the problem 2. Select target behaviour 3. Specify target behaviour
Identify intervention options	4. Identify barriers and facilitators to change 5. Identify intervention functions 6. Identify policy categories
Identify implementation options	7. Identify behaviour change techniques 8. Identify delivery mode

After designing an intervention, it should be materialised through development. Validity is one of the quality criteria of a developed product. The module's components should all be founded on current scientific knowledge (content validity), and they should all be consistently connected to one another (construct validity) (Nieveen, 1999). The module is regarded as valid if it satisfies these characteristics.

Expected practicality is also to be evaluated at this phase. If the counselors consider the module to be usable and that it is easy to be used in a way that is largely compatible with the developer's intentions, the product meet the criteria expected practical (Nieveen & Folmer, 2013). To attain the validity and expected practicality of developed self-help book, it is important to gather information on its design principles.

### **2.8.3 The usability of an ACT-based self- help module for dietary behavioural change**

#### ***2.8.3.1 Previous study of evaluating usability of module***

Obesity is one of other issue that were found effective to be treated by bibliotherapy (Riordan & Wilson, 1989). Interventions incorporating mindfulness and/or acceptance-based elements demonstrated significant benefits when compared to

control conditions, showing positive effects on measures of mindfulness/ acceptance, depression, and anxiety, with effect sizes ranging from small to medium (Cavanagh et al., 2014). One systematic literature review concluded that self-help based on Acceptance and Commitment Therapy (ACT) could be a suitable intervention, especially when accompanied by guidance from a clinician (French et al., 2017).

Participants who were provided with self-help Diabetes Prevention Program manual able to further lose 0.4% of body weight through 8-week program with self-help manual that focus on cognitive and behavioural techniques to aid with weight loss (Carels et al., 2019). Significant diet improvement which include reduction in portion size and energy, fat and carbohydrate intake was seen among participants of self-help paper-based resources intervention (Blomfield et al., 2013). There was a reduction in loss of control over eating among binge eating disorder after attended guided self-help program by dietitian (Traviss-Turner et al., 2018). The National Health Service intervention which provide free online self-managed NHS resource result in significant reduction of body mass within 12 week (Innes et al., 2019).

For the purpose of enhancing healthy eating, weight, and self-stigma, giving ACT through online guided self-help in conjunction with nutrition education looks promising (Levin et al., 2021). Participants attended guided ACT self-help book program reported high satisfaction ratings and engagement with “The Diet Trap” book (Potts et al., 2022). Healthy eating behaviours and general physical activity were improved post intervention (Potts et al., 2022).

Previous study had evaluated the feasibility of ACT “Diet Trap” self-help book (Lillis et al., 2014) using quantitative and qualitative method (Levin et al., 2018). The feasibility of the program was assessed concerning whether individuals with high levels of weight-related self-stigma would perceive a guided self-help intervention as acceptable and would adhere reasonably to its components (Levin et al., 2018). They measure the satisfaction or adherence through program satisfaction survey and weekly “Diet trap” chapter quizzes. Descriptive statistics were analyzed to evaluate satisfaction with the guided self-help program and adherence, such as the number of quizzes completed and self-reported engagement with the provided book. Open-ended

question responses were scrutinized to identify themes related to participants' experiences in the program and their comprehension of the program content.

To measure the effectiveness of “The Diet Trap” self help book, the researchers measure the processes that might have improved throughout the intervention by using instruments such as Acceptance and Action Questionnaire for Weight, Valuing questionnaire and Motivating Factors for Weight Loss questionnaires (Levin et al., 2018).

#### ***2.8.3.2 Methods of evaluating usability of module***

If the client experience usability of the book or consider the book as easy to use, the product meet the actual practical criteria (Nieveen & Folmer, 2013) . If the product meet the aim of product development, it meets its product effectiveness. According to Elliott (2012), studying psychotherapy change process is possible through qualitative method. One of the way is by using change interview questions as to explore change process.

#### **2.8.4 Research framework**

Based on the research objectives, figure 2.12 is the research framework for this study.

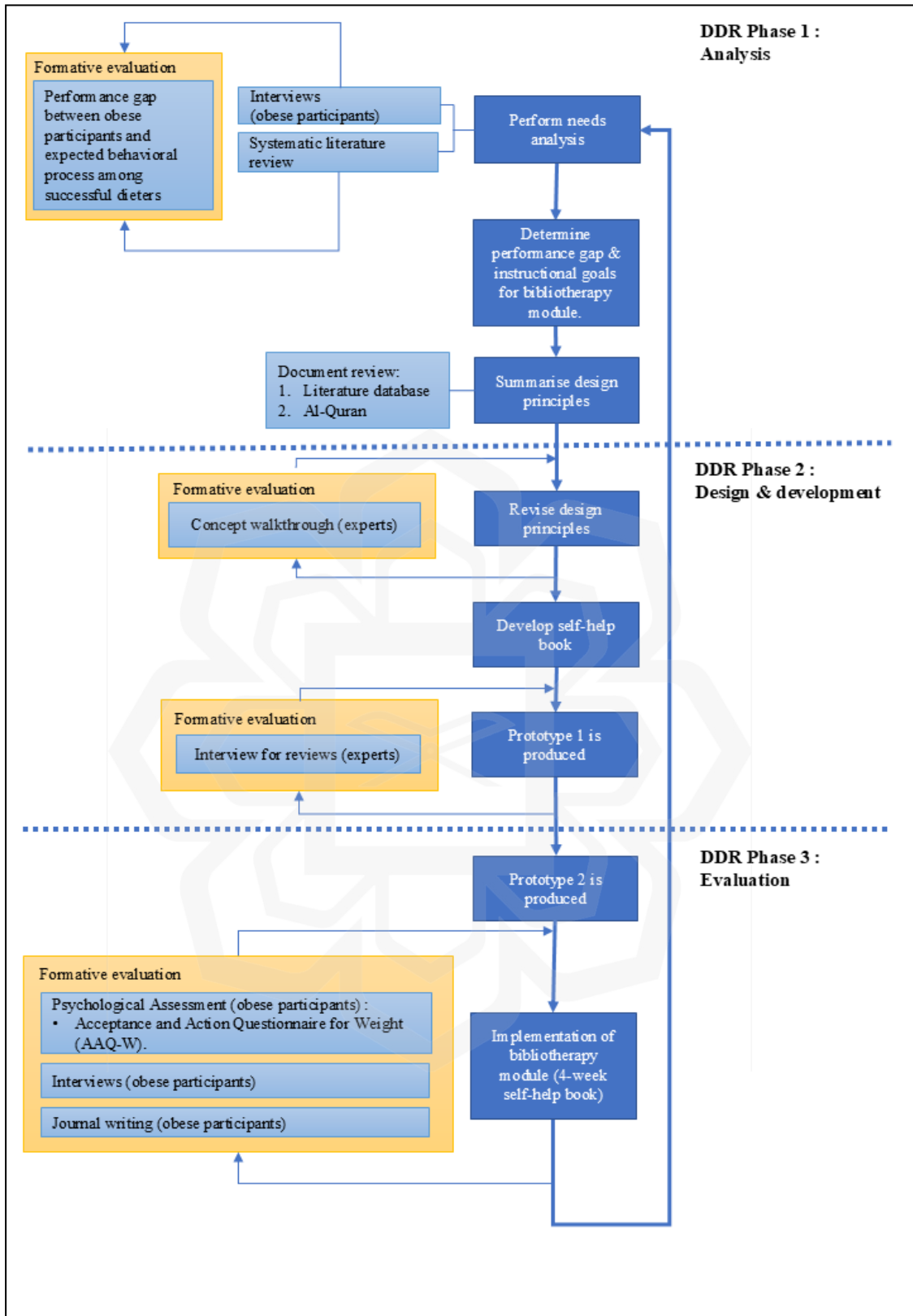


Figure 2.12 Research Framework of the Study

## 2.9 CHAPTER SUMMARY

This chapter reviewed the extant literature, establishing the essential theoretical and conceptual foundations required for the development of the self-help module. The review has been done by first anchoring the study in its philosophical context, detailing the Qur'anic foundations of eating behaviour to establish the overarching *Tawhidic* Epistemology. It systematically explored the central problem of achieving sustained dietary behaviour change and confirmed Acceptance and Commitment Therapy (ACT) as the core psychological model, delivered via bibliotherapy. Finally, the chapter integrated these diverse components into the research framework, which visually guides the entire investigation.

The literature review clearly identified three critical areas that have not been done in current research: a pervasive lack of interventions that rigorously focus on sustained dietary behaviour change over the long term; a deficit in the utilisation of strength-based approaches in designing dietary interventions; and, crucially, a significant absence of Islamic integration or culturally resonant material to serve the target population. These identified research gaps provide the definitive justification for the present study.

The findings of this literature review were pivotal, as they collectively provided direction to the research and its developmental process. The convergence of the identified research gaps and the established theoretical models necessitated the systematic application of Design and Development Research (DDR) principles. The development was guided by the integrated theoretical framework: ACT informed the functional content structure for psychological flexibility, while the bibliotherapeutic process and instructional message design informed the technical development of the self-help book.

Furthermore, the review specified the methodological components necessary for analysing the quality and impact of the developed module. The evaluation adopted a multiple-method approach. Effectiveness was measured using established questionnaire which is the Acceptance and Action Questionnaire for Weight (AAQ-W). Crucially, the review highlighted the necessity of qualitative methods, specifically the use of change interview questions and the examination of open-ended responses to

assess the module's usability by exploring participants' lived experiences and the nuanced process of change.

Notably, this literature review extends its relevance beyond the field of health and nutrition into the broader domain of counselling. By positioning dietary behaviour change within a psychological and spiritual framework, it demonstrates how counselling principles, particularly those grounded in Acceptance and Commitment Therapy, can be applied to promote behavioural sustainability. This cross-disciplinary integration contributes to the counselling field by expanding its scope to include health-related behaviour modification, offering practitioners a culturally responsive model that incorporates Islamic values and bibliotherapeutic techniques for enhancing psychological flexibility and client well-being.

In conclusion, this chapter has provided the necessary evidence, direction, and analytical groundwork. The subsequent chapter, Methodology, will detail the operationalisation of the DDR phases (analysis, design, development, and evaluation) used to create and validate the bibliotherapy module.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter will present the methodology used to examine the proposed research design. It aims to justify the research design and describe each strategy and procedure of data collection for the module development. Sampling and population, instrumentation and data analysis technique will also be presented.

#### **3.2 DESIGN AND DEVELOPMENT RESEARCH IN COUNSELLING CONTEXT**

The field of professional counselling increasingly aligns itself with the scientist-practitioner model, necessitating the use of rigorous research to validate practice and interventions (Sheperis, 2010). This drive for evidence-based material has led to the adoption of systematic instructional design models, such as Design and Development Research (DDR) and ADDIE, to guide the creation of psychoeducational materials, including self-help books.

The design of effective self-help products is complex and poses significant challenges. Historically, psychology has been criticized for failing to advance self-help due to the developers' consistent neglect of basic, empirically grounded guidelines for development and ethical marketing (Rosen & Lilienfeld, 2016). Even when based on recognized treatments like Acceptance and Commitment Therapy (ACT), concerns have been raised about the "possible overselling" of self-help materials (Rosen & Lilienfeld, 2016). On a practical level, effective design requires thorough front-end analysis, involving gaining an in-depth understanding of the target behaviours and the specific characteristics of the population before design commences (Condon & Coulson, 2017). If the initial analysis fails, it becomes harder to make people use, follow, and accept the intervention (Condon & Coulson, 2017).

To overcome these developmental and empirical challenges, Design and Development Research (DDR) offers a powerful methodology. DDR is a unique form of inquiry in instructional design dedicated to creating new knowledge and validating existing practices (Richey & Klein, 2014). Its primary strength is its focus on product and tool development, often examining the entire design and development process from analysis through evaluation (Richey & Klein, 2007). Critically, DDR inherently combines the tasks of design and research, allowing researcher-developers to gather objective, in-progress data to inform revisions and establish validity (Richey & Klein, 2007). This is frequently executed through qualitative research detailing the product's lifespan, and validation involves expert review, such as the assessment of an online career counselling tool by both counselling experts and software specialists, followed by comparative studies to confirm efficacy against traditional methods (Pordelan & Hosseinian, 2022).

Furthermore, the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) provides a valuable, systematic framework that can be integrated into the broader DDR process, offering detailed guidance for the development phase (Davis, 2013). The systematic nature of ADDIE begins with the analysis phase, which directly addresses the critical challenge of incomplete front-end analysis by forcing the designer to identify the instructional problem and the target audience (Davis, 2013). This systematic structure ensures a purposeful and structured creation process (Davis, 2013). The strength of ADDIE within DDR is its adaptability, allowing it to structure research activities, as demonstrated by its successful use in developing educational modules through a mixed-method design (Das et al., 2025). However, models like ADDIE are sometimes criticised for ignoring human factors, leading to challenges in understanding individual learners (Davis, 2013). This research gap is addressed by the prominent methodological theme in counselling and psychotherapy: the use of qualitatively driven mixed-methods approaches (Bailey-Rodriguez, 2021; Hanson et al., 2005). By privileging qualitative data, DDR studies integrated with ADDIE can generate material that provides a more holistic insight into users' experiences, thereby mitigating the systematic model's potential limitations (Bailey-Rodriguez, 2021).

### **3.2.1 Design and Developmental Research (DDR)**

This study uses the design and development research (DDR) approach (Richey & Klein, 2014) to solve problem in educational counselling specifically pertaining to changing eating behaviour. Developing a self-help book as a bibliotherapy module may enhance the treatment given by counsellors as bibliotherapy helps client to understand about themselves better. This increase level of self-efficacy that improve commitment to behavioural change.

DDR as a science, suggest that the solutions to problems should be supported by data and all procedures must be validated (Richey & Klein, 2014). Hence, DDR as a systematic study of design, development and evaluation serve as framework that guide the researcher to plan the performed activities of this study. As mentioned in chapter 2, there are two types of DDR which are type 1 (products and tools research) and type 2 (design and development of model). This study is DDR type 1 which focuses on the design and development of instructional product.

The research phases in DDR is originally four which are analysis phase, design phase, implementation phase and evaluation phase. This study chooses to use modified DDR phases as the following (Saedah et al., 2021):

1. Analysis phase.
2. Design and developmental phase.
3. Evaluation phase.

As a novice researcher, it is advisable to employ a framework to guide major milestones in design and development research (Ellis & Levy, 2010). Hence, this study will adopt ADDIE model as the research framework to guide its milestones.

### 3.2.2 ADDIE Instructional Design Model

Instructional design model is a systematic approach to solve an instructional problem. This study integrates an instructional design (ID) model termed ADDIE model with Design and Development Research (DDR) to develop the proposed bibliotherapy module “Making peace with diet” in the form of a self-help book. There are three main phases of DDR which are 1) Analysis; 2) Design and Development; 3) Evaluation. Type 1 DDR requires researcher to employ one instructional design model into the DDR phase (Ellis & Levy, 2010). Modified ADDIE instructional model is selected. It is an acronym for analysis (A), design (D), development (D), implementation (I) and evaluation (E).

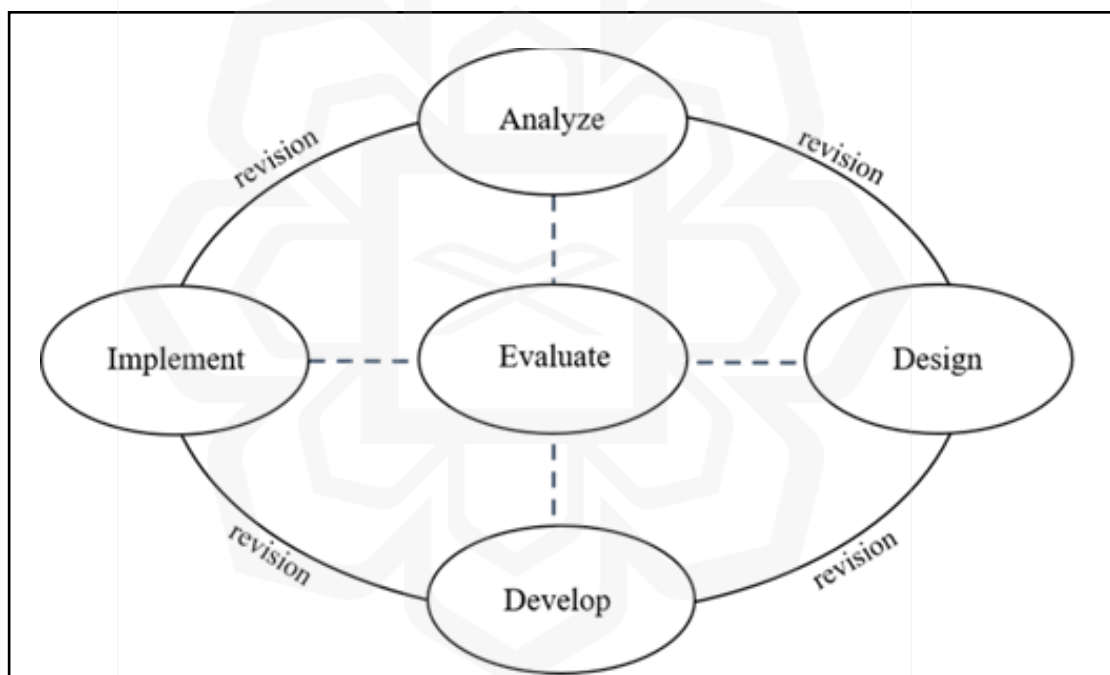


Figure 3.1 Modified ADDIE model (Gustafson & Branch, 2002)

ADDIE model is chosen because it matches with the phases in DDR (See Table 3.1).

Table 3.1 Integration of ADDIE model in DDR

Phase	Design and Development (DDR)	Phase	ADDIE Model
1	Analysis	1	Analysis
2	Design and Development	2	Design
		3	Development
3	Evaluation	4	Implementation
		5	Evaluation

### 3.3 RESEARCH DESIGN

This section describes overall strategies and methods related to data collection and data analysis process. This is important to ensure the study will address the research problem with acceptable degree of validity and reliability. Relevant research design is important to answer the research objectives and research questions effectively. In order to present the research design systematically, Saunder’s onion research design is used.

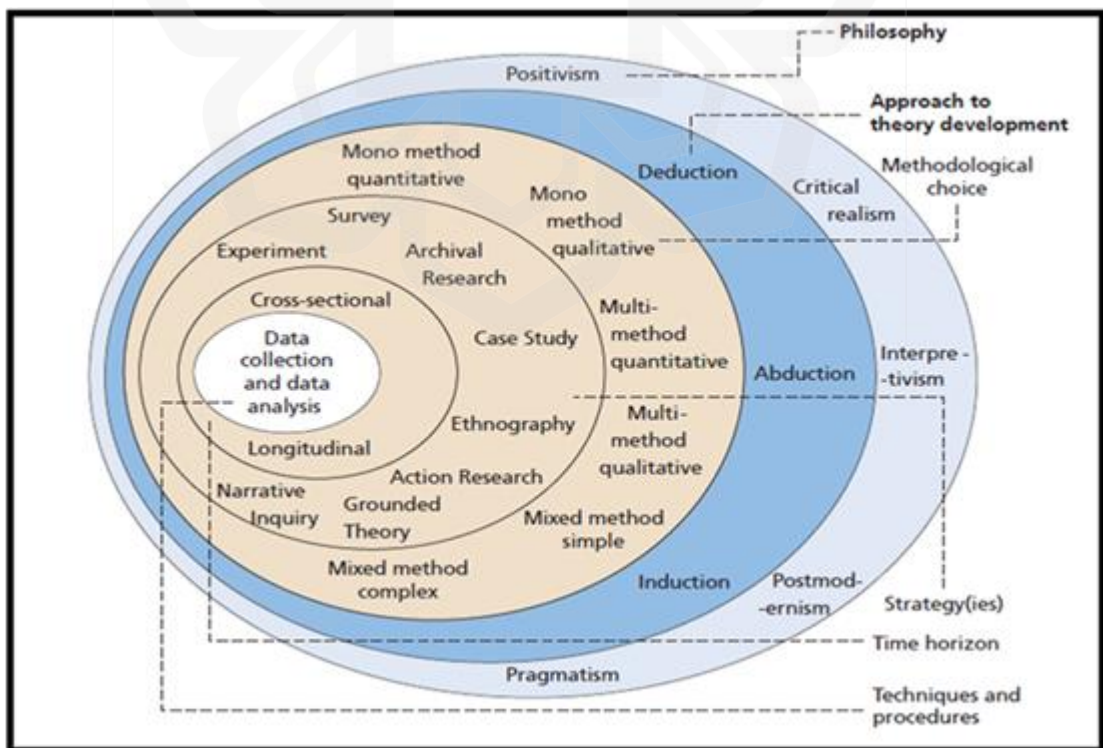


Figure 3.2 The “research onion” (Saunders et al., 2019)

### **3.3.1 Philosophical research**

In social sciences, there are several philosophical stances including positivism, critical realism, interpretivism, postmodernism and pragmatism. This research adopts the pragmatism paradigm based on four assumptions. First, on ontological sense, pragmatism believes that the reality is seen in what is useful, practical and works. Second, from epistemological assumption, pragmatism is developed through various tools via deductive or inductive sources. Thirdly, based on the axiological assumption, pragmatism believes in the collaboration between the participants and the research to construct knowledge. Lastly, from the methodological assumption, pragmatism researchers may choose methods, techniques and procedures freely based on the study purpose. Based on these four assumptions, this study chooses pragmatism as its paradigm based on its suitability, beliefs and methodological practices.

### **3.3.2 Approach to theory development**

There are three approaches in research which are inductive, deductive and abductive. Inductive approach generates themes from collected and analysed data to conclude findings. The deductive approach, on the other hand, aims to test hypotheses of certain theory. It starts by selecting an existing theory, developing research questions, and then designing a strategy to test the hypotheses. Abductive approach is recently added in this research and it aims to develop and enhance existing theory.

By adopting the pragmatism position, this study will focus on developing a module based on existing theories and collect qualitative data to explore the experiences of participants. This requires mostly inductive approach.

### **3.3.3 Methodological choice**

Research is also being classified into quantitative and qualitative. Numerous studies have recommended the application of qualitative measures to explore the contradictions emerging from current research on the interplay between interpersonal,

intrapersonal, and environmental factors influencing eating behaviour among Malaysian youths (Abang Brian et al., 2023) .

This study will employ a qualitative research that emphasis on document review (literature database, Qur'an and selected self-help book), participants' responses as well as collecting data from expert consensus. Hence, this study starts with adopting a multi-method qualitative approach for data collection.

### **3.3.4 Research strategy**

The foundational research strategy employed for this study is Design and Development Research (DDR). This strategy is uniquely suited for the research purpose, which is to create and validate a tangible innovation: a bibliotherapy module for sustained dietary behaviour change in the form of a self-help book. DDR is defined as a systematic inquiry within the instructional design and technology field that focuses on the "creation of new knowledge and the validation of existing practice" (Richey & Klein, 2014, p. 1). This designation classifies the work as product and tool research, which methodologically necessitates the examination of the entire design and development process from analyses to evaluation (Richey & Klein, 2007).

To execute this strategy systematically, the study will employ the ADDIE instructional design model. This framework structures the DDR process into manageable phases: Analysis, Design, Development, Implementation, and Evaluation. This systematic, multi-phase procedure aligns perfectly with the study's pragmatism philosophical stance, which dictates that researchers adopt a multiple strategies to effectively address practical, real-world problems (Richey & Klein, 2014). Furthermore, the DDR approach requires a comprehensive evaluation framework. The study incorporate formative evaluation techniques to ensure the product's usability and effectiveness throughout its creation, establishing a robust empirical foundation for the bibliotherapy module and its potential impact on sustained behaviour change (Richey & Klein, 2007).

### **3.3.5 Time horizon**

The second innermost layer of Saunder's research onion is time horizons. Data for a research can be collected either cross-sectional or longitudinal. Cross-sectional focuses on specific phenomenon at a specific point of time. Longitudinal on the other hand observes a phenomenon over an extended period. Hence, based on the objective of the research, a cross-sectional study is considered as more appropriate for this research.

### **3.3.6 Techniques and procedures**

This study is interested in exploring effective way to promote sustainable eating behaviour change thus, rigorous document review is held. To establish the rationale and needs of developing the instructional product, interviews with the obese individuals are conducted. To attain the validity of the product, expert consensus are employed. To explore the experience of the participants undergoing the module, the researcher will interview the participants of program intervention during and after the implementation. Finally, to explore the usability of the module, data collected during implementation process is analysed.

### **3.3.7 Summary of research design**

All in all, the research aims to develop a self-help book as a tool to meet the objective of assisting client to attain sustainable dietary behaviour change. This aim is met by choosing an instructional design strategy in line with DDR. To answer the research objectives of each phases in DDR, this research uses multiple-method approach. This study employs inductive approach which involves qualitative data to generate strong principles of developing a module. This is gained by collecting important feedbacks from experts and practitioner to guide the process of product development.

### 3.4 RESEARCH SETTING AND SCOPE

The timeline for this study began in September 2021 with analysis phase, followed by the design phase throughout 2022 and development phase in 2023. It concludes in 2024 after the product is evaluated by female overweight and obese participants.

Table 3.1 summarize the research setting of the study according to DDR phase.

Table 3.2 Research setting

<b>Research setting</b>	<b>Analysis phase</b>	<b>Design and developmental phase</b>	<b>Evaluation phase</b>
<b>Population</b>	Overweight or obese undergraduate female students	Lecturers (psychology field), counsellors (ACT practitioners).	Overweight and obese undergraduate female students
<b>Location</b>	Malaysia	Malaysia	Malaysia
<b>Time period</b>	September-October 2021	Jan 2022 - December 2023	April – June 2024

### 3.5 PARTICIPANTS

This study dominantly uses purposive sampling in accordance to the needs of every phase in design and development research process. There are multiple types of participants in every phase (Richey & Klein, 2005) of developmental research. For this study, the data collection utilises qualitative study (document review, interviews and journal writing) for exploratory type of research. Thus, purposive sampling is appropriate for design and developmental research as its principle is to get all possible cases that fit particular criteria using various methods (Neuman, 2014).

This study uses convenience sampling in which the samples are selected based on time, location and availability of respondents. Table 3.2 describes the type of participants for every phase of this study. To make sure the study produce information-rich cases, the interviewer play important role in gathering enough information from all the respondents. According to Fusch & Ness (2015), three guidelines to determine if the data collection has reached data saturation. The three guidelines are 1) enough information to replicate the study 2) when researchers have

gathered enough information to thoroughly explore the research topic and 3) when further data collection or analysis would not yield any new, significant findings.

Table 3.3 Type of participants according to Design and Development Research phases

No.	DDR phase	ADDIE stage	Sub-studies	Participants (number of participants)
1	Analysis	Analysis	Interview	Overweight or obese female (5)
2	Design & development	Design	Discussion	Academician (2)
		Development	Interview	Counsellors (2)
3	Evaluation	Implementation and evaluation	Formative evaluation: 1. One-to-one evaluation (interview) 2. Reflective journaling 3. AAQ-W questionnaire assessment	Overweight or obese young adults female university students (5)

The main goal of a formative evaluation during the early stages of a project is to identify intervention flaws and generate suggestions for improvement (Nieveen & Folmer, 2013). For this purpose, the sample size is less important; a comment from a single respondent could be extremely valuable due to its salience (Nieveen & Folmer, 2013). If carefully chosen, small samples of respondents are typically sufficient. In order to ensure that the comments and reactions are as informative as possible, samples are frequently purposefully picked.

### **3.5.1 The overweight or obese young female adult**

The overweight or obese people are important participants for this study to answer the research questions in analysis phase and evaluation phase. During the analysis phase, one of the tasks is to identify the learners' characteristics. Thus, interview of five people among overweight and obese female students were held. The number of participants for this research question is five as the saturation point is met.

Later on, after the product (self-help book) was developed and validated by experts, the product was evaluated for its reliability based on module usability. To meet this objective, during evaluation phase of DDR, five participants among the overweight or obese female students were recruited. The usability of the product is evaluated through interview (one-to-one evaluation) and reflective journaling and AAQ-W questionnaire assessment.

### **3.5.2 The experts**

The experts are respondents who involve directly in the research providing data that answer the research questions. For this study, the experts are sought during design & development phase. The subjects of the study are competent and highly trained in the specific area of knowledge related to the study (Hsu & Sandford, 2007).

During the design phase, a prototype of self-help book was designed using the data collected at the analysis phase. The elements of the product was formatively evaluated by experts from psychology discipline. The experts recruited during this phase are academician with post-doctoral experience more than 5 years (Hillerbrand & Claiborn, 1990). Two lecturers from the psychology department has contributed for this phase (E1 and E2). The following are characteristics of chosen experts:

Table 3.4 Experts background for reviewing design principles

No.	Expert	Background of the experts
1	E1	<ul style="list-style-type: none"> <li>• An Assistant Professor in one of the public university (psychology department)</li> <li>• Had published articles related to Acceptance and Commitment Therapy.</li> <li>• Her PhD study was related to Acceptance and Commitment Therapy</li> <li>• Had been doing counselling in clinical setting for more than 5 years using Acceptance and Commitment Therapy.</li> </ul>
2	E2	<ul style="list-style-type: none"> <li>• An Assistant professor in one of the public university (psychology department)</li> <li>• Had been involved in post-doctoral research in developing mobile application and books with Acceptance and Commitment Therapy as the modality.</li> <li>• More than 10 years experience as lecturer in psychology field.</li> </ul>

At the development stage, a self-help book prototype was developed. The product was formatively evaluated by experts via interview. Two counsellors (E3 & E4) with more than 5 years experience in using ACT as counselling modality joined the interview. One lecturer from nutrition science department (E5) and one lecturer from Islamic revealed knowledge (E6) also involved in evaluating the content of the developed self-help book even though their inputs are not part of the study.

Table 3.5 Experts background for reviewing developed prototype 1

No.	Expert	Background of the experts
1	E3	<ul style="list-style-type: none"> <li>• A registered counsellor with Malaysian Board of Counsellors</li> <li>• Currently working as associate therapist in private counselling centre.</li> <li>• An ACT practitioner since 2017.</li> <li>• Member of the Association of Contextual Behavioural Science.</li> </ul>
2	E4	<ul style="list-style-type: none"> <li>• A registered counselor with Malaysian Board of Counsellors.</li> <li>• Currently working as a counsellor in private counselling centre.</li> <li>• An ACT practitioner since 2018.</li> <li>• She developed a culturally-adapted ACT-based module for adolescents “Time to ACT!”</li> <li>• Member of the Association of Contextual Behavioural Science.</li> </ul>
3	E5	<ul style="list-style-type: none"> <li>• An associate professor in one of Malaysia public university</li> <li>• Currently working as lecturer in faculty of Quranic and sunnah studies.</li> <li>• Area of expertise include Quran and sunnah studies, educational psychology, pedagogy and education for the disabled.</li> </ul>
4	E6	<ul style="list-style-type: none"> <li>• An assistant professor in one of Malaysia public university</li> <li>• Currently working as a lecturer in department of nutritional sciences.</li> <li>• Area of expertise include clinical nutrition and dietetics.</li> <li>• Her PhD thesis was about counselling (motivational interviewing)</li> </ul>

### 3.6 QUALITY CRITERIA OF THE MODULE

According to Nieveen and Folmer, there are four quality criteria for educational interventions which are relevancy, consistency, practicality and effectiveness (Nieveen & Folmer, 2013). The following table describes each criteria of intervention quality.

Table 3.6 Quality criteria of a module

<b>Criteria</b>	<b>Description</b>
Relevancy	<ul style="list-style-type: none"> <li>– There is a need for the intervention</li> <li>– Its design is based on state-of the art (scientific) knowledge which is called “content validity”</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>– The intervention is ‘logically’ designed which is also called as “construct validity”</li> </ul>
Practicality	<ul style="list-style-type: none"> <li>– Expected practicality: The intervention is anticipated to be usable in the intended setting for which it has been designed.</li> <li>– Actual practicality: The intervention is usable within its intended setting.</li> </ul>
Effectiveness	<ul style="list-style-type: none"> <li>– Expected effectiveness: Using the intervention is anticipated to yield the desired outcomes.</li> <li>– Actual effectiveness: Using the product leads to the attainment of desired outcomes.</li> </ul>

### 3.6.1 Relevancy

The initial stage of research is essential for understanding the educational issue at hand, specifically the disparity between the current situation and the desired outcome. The fundamental query revolves around identifying the educational problem that the intervention should target.

The primary objectives of this initial phase include acquiring a deeper understanding of the current problematic scenario and exploring potential avenues for enhancement and innovation (Nieveen & Folmer, 2013). Additionally, the goal is to outline the anticipated features of the intervention (preliminary design principles) and outline strategies for their development (Nieveen & Folmer, 2013).

The first objective is to prove that there is a need to develop this particular product intervention. The research activity done for this purpose is analysing the user practice in terms of needs analysis and context analysis. The second objective is to prove the product design is based on state-of the art (scientific) knowledge. The research activity for this objective is exploration of the scientific knowledge base via

literature review and expert appraisal. These two criterias are quality measures for the relevance of a module.

### **3.6.2 Consistency**

Consistency is when the intervention is logically designed in which the module's content demonstrate a continual connection with each other (Nieveen & Folmer, 2013). It is also termed as “construct validity”.

### **3.6.3 Practicality**

An intervention is considered as practical when it is usable in the settings for which it has been designed and developed. This study is about designing and developing a bibliotherapy module. Hence, its practicality depends on the text materials readability.

According to Klare (1963), readability of a text is a proof that it is clear and easy-to-read, there is comfort in reading due to interest and comfort in understanding because of the writing style. A book may also be evaluated for the appropriate literacy level, readability, helpfulness of content and ease of use (Wagner, 2016).

### **3.6.4 Effectiveness**

The fourth criteria of module's quality is effectiveness. This will be done if there is a summative evaluation being conducted. The most effective research design for unveiling cause-and-effect relationships is a (quasi-)experiment. The potential impact of the intervention will determine the decision to conduct or forego a summative evaluation (Nieveen & Folmer, 2013). If there's a plan to develop a new nationwide curriculum, it appears reasonable to earmark the required funds for a thorough summative assessment. (Nieveen & Folmer, 2013).

Formative evaluation serves the purpose of improvement, aiming to uncover deficiencies in an object during its development and generate suggestions for enhancement. On the other hand, summative evaluation is geared towards validation or proof. A summative evaluation is conducted to gather evidence regarding the effectiveness of the intervention and to identify arguments supporting the decision to either continue or terminate the project.

Particularly for this research, it is very localized research and does not involve the national curriculum. Hence, it is decided not to conduct the summative evaluation to check for product effectiveness since the effect of the intervention is substantially less. This research only conducts formative evaluation to explore its effectiveness for prototype improvement.

### 3.6.5 Summary of quality criteria of module

The following are the evaluation for quality criteria related to stages in design and developmental research.

Table 3.7 Evaluation strategies according to DDR phase

Phase	Criteria	Description of evaluation
Analysis	Relevancy in terms of needs analysis	Analysis of user practice: Explore the needs analysis of product by interviewing members of the user group.
Design	Relevancy in terms of content validity.	Screening: Members of the design research team check the design. Data is collected via concept walkthrough with expert using a checklist containing the required characteristics of the intervention based on literature findings.
Develop	<ul style="list-style-type: none"> <li>- Content validity</li> <li>- Consistency (construct validity)</li> <li>- Expected</li> </ul>	Expert appraisal: A group of respondents reacts to the first prototype developed. Data is collected via interview.

	practicality - Expected effectiveness	
Implementation and evaluation	- Actual practicality - Actual effectiveness	Try-out: The overweight or obese participants uses the prototype 2 in practice. The evaluation activities include interviewing, administering questionnaires and requesting journals.

### 3.7 INSTRUMENTATION

Instruments are tools or means that enable researchers measure variable or items of interest to obtain data from the research subjects. This section will divide instrumentation to three parts which are instruments for analysis, instruments for design and development of the module and instruments for evaluation of the module.

#### 3.7.1 Instruments for analysis phase

##### 3.7.1.1 *Interview among overweight and obese female university students*

A semi-structured questions was constructed to explore the challenges and facilitating factors to sustain eating behavioural changes among overweight and obese female university students. A number of questions was adapted from previous literature to understand the needs for ACT-based bibliotherapy module. The interview questions were validated by two experts from psychology and counselling background. Letter of appointment and instrument validation form were sent to the two experts (refer Appendix A). Table 3.8 shows the validated interview questions.

Table 3.8 Interview questions for needs analysis

Issue & Central phenomenon	Purpose statement	Central research question	Research questions	Interview questions	Expected data
<p><b>Issue:</b></p> <p>Overweight and obesity among female young adults (university students)</p> <p><b>Central phenomenon:</b></p> <p>The eating behaviour of overweight or obese students in tertiary education.</p>	<p>To explore the experiences of overweight and obese female university students to sustain eating behavioural changes.</p>	<p>To what extent developing a counselling bibliotherapy module for sustainable eating behavioural change is necessary?</p>	<p>RQ 1.1</p> <p>To what extent the overweight and obese able to sustain dietary behaviour change after intervention for weight management?</p>	<p>1. What are the methods or helps have you sought to lose weight?</p>	<p>Methods to change eating behaviour</p>
			<p>2. What are the behaviour changes that occur after you attended the weight management intervention?</p>	<p>Behaviour change after intervention.</p>	
			<p>3. If you change your eating behaviour after the intervention, how long does it sustain?</p>	<p>Duration of sustainment of eating behaviour change.</p>	
			<p>4. How willing are you to change your eating habits now (Scale 1-5)? Why do you choose that scale?</p>	<p>Participants level of commitment to change eating behaviour.</p>	
			<p>RQ 1.3 What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?</p>	<p>1. What does your weight mean to you? Are there situations you avoid due to your weight? Have you ever been discriminated against due to your weight?</p>	<p>Weight self-stigma</p>
			<p>2. What are your challenges to lose weight and maintain its' loses?</p>	<p>Challenges for weight maintenance.</p>	
			<p>3. How do you make decision on what to eat?</p>	<p>Basis of decision making (is it value-based)</p>	

				4. How willing are you to experience negative thoughts, negative emotions and uncomfortable physical sensation related to this goal?	Evidence of unworkable experiential avoidance
				5. What is your most difficult goal-related tasks and how was your usual respond towards it?	Participants' commitment towards goal
				6. What is your opinion about having a self-help book to assist you through your losing weight agenda?	Participants' perception of benefits or disadvantages of having a self-help book for sustained dietary behaviour.

### **3.7.2 Instruments for design and development phase**

#### ***3.7.2.1 Screening of design principles via concept walkthrough***

During analysis phase, document review was conducted to come up with tentative design principles of the intervention. A review checklist was provided for the experts to comment on derived design principles (refer Table 3.9).



Table 3.9 Review checklist for design principles

No.	Domain	Main design principles	Elaboration of principles
1	Acceptance and Commitment Therapy	1.1 Start with concept of valued living (Ciarrochi, Bailey, et al., 2014; Lee-baggley, 2019).	1.1.1 The key to sustained behavioural change is to link the new behaviour with motivational values
		1.2 Explain “experiential avoidance” and “creative hopelessness” first before introducing the concept of “acceptance” (Merwin et al., 2023)	1.2.1 Introduce concept via identifying patterns of experiential avoidance and their costs.
		1.3 For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	1.3.1 Provide text and illustration to develop readers’ values clarification skill. <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Attending your own funeral exercise.</li> <li>• The differences between values and goals.</li> <li>• Planning the content of my deeds book.</li> </ul> </li> <li>○ Enhance values clarification skill via : <ul style="list-style-type: none"> <li>• Identify values in key life domains</li> <li>• Clarifying if/ how changing eating habit is connected to personal values.</li> <li>• “Finding meaning in pain” exercise</li> </ul> </li> </ul> 1.3.2 Provide text and illustration to develop readers’ acceptance skill <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Identify patterns of experiential avoidance and their costs.</li> <li>• “Passengers on the bus” metaphor</li> <li>• Reflect on the skill being trained in the fasting month of</li> </ul> </li> </ul>

			<p>Ramadhan.</p> <ul style="list-style-type: none"> <li>• Enhance acceptance skill via : <ul style="list-style-type: none"> <li>• Urge surfing exercise</li> <li>• “Make space for emotion” exercise</li> <li>• Willingness pedometer as monitoring tool</li> </ul> </li> </ul>
			<p>1.3.3 Provide text and illustration to develop readers’ contact-with-present-moment skill</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Intentional eating vs auto-pilot mode.</li> </ul> </li> <li>○ Enhance contact-with-present-moment skill via : <ul style="list-style-type: none"> <li>• Dropping anchor exercise</li> <li>• Mindful breathing exercise</li> <li>• Mindful eating exercise</li> <li>• Mindful drinking exercise</li> </ul> </li> </ul>
			<p>1.3.4 Provide text and illustration to develop readers’ cognitive defusion skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• “Why language lead to suffering?”</li> <li>• Notice unhelpful thinking patterns</li> <li>• The existence of whisper from syaitan</li> </ul> </li> <li>○ Enhance cognitive defusion skill via : <ul style="list-style-type: none"> <li>• Introduce the concept of taawuz “Seeking protection of Allah from waswasah.”</li> <li>• Guided imagery of hearing thoughts from mind avatar</li> <li>• Guided imagery of watching thoughts as cue cards that walk on the stage</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>• Thanking the thoughts exercise</li> <li>• Rhyme the “thoughts” into a known song (e.g happy birthday song)</li> </ul>
			<p>1.3.5 Provide text to develop readers’ self-as-context skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• The skies metaphor</li> <li>• Explore negative consequences of self-stigma.</li> <li>• Concept of self-compassion through “Two teacher metaphor”</li> </ul> </li> <li>○ Enhance self-as-context skill via : <ul style="list-style-type: none"> <li>• Compassionate friend exercise</li> <li>• Extending gratitude to the body (body scan).</li> </ul> </li> </ul>
			<p>1.3.6 Provide text to enhance the capability to commit in valued action.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• The values-commitment worksheet</li> <li>• Choice point worksheet.</li> </ul> </li> <li>○ Enhance committed to valued action skill via : <ul style="list-style-type: none"> <li>• Set values-based goals.</li> <li>• Explore barriers or obstacles and how to overcome them.</li> <li>• Discuss on self-monitoring tools.</li> </ul> </li> </ul>
2	Therapeutic reading (bibliotherapy)	2.1 Provide text that allow the process of identification, projection, catharsis and insights to occur (Shrodes, 1950)	<ul style="list-style-type: none"> <li>• Include relevant short stories to bring about identification, projection and catharsis process</li> <li>• Provide reflection exercises to elicit insights</li> </ul>
3	Instruction message	3.1 Apply communication theory in instructional design (Hartley,	<p>3.1.1</p> <ul style="list-style-type: none"> <li>• Design the layout using guidelines of text designs</li> <li>• Write organized messages which are in orderly state, rich in</li> </ul>

	design	2004; Richey et al., 2011a)	<p>pattern and structure, highly interconnected and containing a good deal of redundancy.</p> <ul style="list-style-type: none"> <li>• Manage information load.</li> <li>• Use cueing techniques.</li> <li>• Use content-generated attention.</li> </ul>
		3.2 Apply learning theory in instructional design (Richey et al., 2011b)	3.2.1 <ul style="list-style-type: none"> <li>• Message design strategies</li> <li>• Chunking</li> <li>• Mnemonics</li> <li>• Advance organizers</li> </ul>

### ***3.7.2.2 Micro-evaluation of prototype 1 via interview with the experts***

The reviewed design principles was used to develop prototype 1. The semi-structured interview questions for expert validation were adopted and adapted based on Tessmer (1993) to suit the need of the module validation processes. This interview questions was further validated by expert in DDR and qualitative research (for letter of appointment and instrument validation form, refer Appendix B).

Interviews were conducted with two counsellors to review the content validity and construct validity of “Prototype 1.” Table 3.10 presents the interview questions used with the ACT counsellors to obtain feedback on “Prototype 1.” In addition, two lecturers were given open-ended questionnaires to validate the Qur’anic values and healthy eating guidelines. The open-ended questionnaires for the Qur’an and Sunnah Studies lecturer and the dietetics lecturer can be found in Appendix C. Although the input from these two questionnaires was not part of the study’s main objectives, it was collected to ensure that all components of Prototype 1 were adequately validated.

Table 3.10 Interview questions for expert reviews among ACT counsellors

<b>Issue &amp; Central phenomenon</b>	<b>Purpose statement</b>	<b>Central research question</b>	<b>Research questions</b>	<b>Interview questions</b>	<b>Expected data</b>
<p><b>Issue :</b> Overweight and obesity among female young adults (university students)</p> <p><b>Central phenomenon:</b> The eating behaviour of overweight or obese students in tertiary education.</p>	<p>To get feedbacks and expert reviews on developed prototype 1 which aimed to help readers sustain dietary behaviour change.</p>	<p>What are the components needed to develop a value-based self-help book for sustained dietary behaviour change?</p>	<p>RQ 2.2 How can psychological flexibility elements identified as necessary by the needs analysis be incorporated into the module?</p>	<p>1. What is your opinion about the content's accuracy?</p> <p>2. What is your opinion about the content? Is it thorough/ extensive enough? a) Any important information missing? b) Is the content up-to-date?</p> <p>3. Based on your experience as a counsellor with knowledge in ACT, do you think the module will be effective in helping readers to improve their psychological flexibility? a) What is your opinion about chapter 1 that aims to introduce readers with the concept of psychological flexibility? b) What is your opinion about chapter 2 that aims to train readers with "contact with present moment" skill? c) What is your opinion about chapter 3 that aims to train readers with</p>	<p>Content accuracy</p> <p>The extensiveness of developed module prototype.</p> <ul style="list-style-type: none"> <li>• Content accuracy (content validity)</li> <li>• Quality of module in terms of meeting its objectives.</li> <li>• The module's coherence and cohesion (construct validity)</li> </ul>

				<p>“cognitive defusion” skill?</p> <p>d) What is your opinion about chapter 4 that aims to train readers with “Clarification of values” skill?</p> <p>e) What is your opinion with regards to chapter 5 that aims to train readers with “Acceptance” skill?</p> <p>f) What is your opinion about chapter 6 that aims to train readers with “self-as-context” skill?</p> <p>g) What is your opinion about chapter 7 that aims to train readers with “Committed action” skill?</p> <p>h) What is your opinion about chapter 8 that summarize the content of the book and end the week-by-week skills transfer?</p>	
				<p>4. What is your opinion about the clarity of the content?</p> <p>a) Are the instructions clear?</p> <p>b) Would the readers able to understand?</p>	Content clarity
				<p>5. Given that you are to change one thing in the module,</p> <p>a) What would it be?</p> <p>b) How would you do it?</p>	Revision points for improvement

### **3.7.3 Instrument for evaluation phase**

During this phase, try-out was done in which the prototype 2 was used in practice. Formative evaluation includes questionnaire assessment, interviews and journaling were conducted. These strategies aim to evaluate process behaviour, satisfaction or adherence measures and to attain feedbacks on practicality of using the module.

#### ***3.7.3.1 Acceptance and Action Questionnaire for Weight (AAQ-W)***

The AAQW consists of 22 items designed to assess psychological inflexibility and experiential avoidance related to thoughts and feelings about weight. Essentially, it gauges the extent to which these weight-related thoughts and emotions rigidly influence behaviour, especially in terms of avoidance behaviours, and overshadow more effective or meaningful patterns of action. Respondents rate the items on a 7-point scale, ranging from "never true" to "always true." Previous study have demonstrated the reliability and validity of the AAQW as a measure (Lillis & Hayes, 2008). For questionnaire, refer Appendix D.

#### ***3.7.3.2 Interview***

To get feedbacks on practicality of developed module, a weekly interviews were held. The type of interview questions being asked every week depended on the chapter the participants had read. This helped the researcher to attain information about participants' comprehension of the book. The interviews were also conducted to assess whether the participant believed any changes occurred as a result of their engagement in the ACT intervention. These adapted questions (Jinks, 2016) allow the participants to share their feedbacks regarding the developed self-help book. These interview questions were validated by an assistant professor from counselling department and an associate professor who is an expert in DDR and qualitative study.

Table 3.11 Interview questions to explore practicality of prototype 2

Issue & Central phenomenon	Purpose statement	Central research question	Research questions	Interview questions	Expected data
<p><b>Issue:</b> Overweight and obesity among female young adults (university students)</p> <p><b>Central phenomenon:</b> The eating behaviour of overweight or obese students in tertiary education.</p>	<p>To get feedbacks and user-retrospective on developed prototype 2 which aimed to help readers sustain dietary behaviour change.</p>	<p>What is the usability of the developed self-help book?</p>	<p>RQ 3.1: What are the practicality of the developed self-help book (<i>Making peace with diet</i>) based on user retrospective and reactions among the participants who attended the 4-week bibliotherapy intervention?</p>	<ol style="list-style-type: none"> <li>1. Are you able to understand the content of each chapter?               <ol style="list-style-type: none"> <li>a. In brief, tell me what you understand from “<i>Bab 1: Berdamai dengan diet</i>”</li> <li>b. What do you understand from “<i>Bab 2: Jalani hidup yang bermakna, sekarang</i>”</li> <li>c. What do you understand from “<i>Bab 3: Acceptance and commitment therapy</i>”</li> <li>d. What do you understand from “<i>Bab 4: Membuat keputusan penuh kesadaran</i>”</li> <li>e. What do you understand from “<i>Bab 5: Perjelaskan nilai dan bangunkan komitmen</i>”</li> <li>f. What do you understand from “<i>Bab 6: Bersikap terbuka kepada pengalaman</i>”</li> <li>g. What do you understand from “<i>Bab 7: Psikologi yang fleksibel?</i>”</li> </ol> </li> <li>2. Which part of the book that you skip reading or skip doing the activity? Why?</li> <li>3. On a scale of 1-10 (1-Very low motivation and 10-Highly motivated), how do you see your level of motivation in completing reading the book?</li> <li>4. Any additional comments or feedbacks regarding the developed self-help book?</li> </ol>	<p>Practicality of the book in providing information about psychological flexibility for sustained dietary behaviour change.</p>

Table 3.12 Interview questions to explore the effectiveness of prototype 2

Issue & Central Phenomenon	Purpose statement	Central research questions	Research questions	Interview questions	Expected data
<p><b>Issue:</b> Overweight and obesity among female young adults (university students)</p> <p><b>Central phenomenon:</b> The eating behaviour of overweight or obese students in tertiary education.</p>	<p>To get feedbacks and user-retrospective on developed prototype 2 which aimed to help readers sustain dietary behaviour change.</p>	<p>What is the usability of the developed self-help book?</p>	<p>RQ 3.2: To what extent does the implementation of guided self-help book (<i>Making peace with diet</i>) improve participants' level of psychological flexibility to sustain healthy eating behaviour change?</p>	<ol style="list-style-type: none"> <li>1. How do you find the self-help book? Did the book make sense?</li> <li>2. Were there any parts of the book which you found helpful / not helpful?</li> <li>3. Does the book help you improve your skill in modifying your eating behaviour?</li> <li>4. What have changed in terms of your view and behaviour?</li> <li>5. Are there situations you avoid due to your weight issues?</li> <li>6. What do you know about being present?</li> <li>7. How do you see yourself with regards to being focused on what is happening in the present.</li> <li>8. How do you see yourself in terms of making mindful eating decision?</li> <li>9. What do you understand about observing self?</li> <li>10. How do you see yourself in terms of treating self with kindness?</li> <li>11. What do you understand about putting a distant with thoughts?</li> </ol>	<p>Effectiveness of the book in contributing to process change</p> <p>Effectiveness of the book to improve psychological flexibility for sustained dietary behaviour change.</p> <p>Evidence of experiential avoidance</p> <p>Evidence of contacting with present moment skill</p> <p>Evidence of perspective taking or be the observer self through self-compassion skill</p> <p>Evidence of cognitive defusion skill</p>

				12. What challenging thoughts that get in the way of meeting your goals? What did you do when such thoughts occur.	
				13. What do you understand about willingness of experiencing internal discomfort such as emotions or sensations? 14. What challenging feelings or sensations that get in the way of meeting your goals? How willing are you (in a scale of 1-5) to experience uncomfortable emotional and physical sensations in your efforts to achieve this goal?	Evidence of acceptance skill
				15. What do you understand about values? 16. How do you make decision on what to eat at each meal time? 17. What is it that influence you in deciding eating?	Evidence of clarity of values
				18. What is your most difficult goal-related tasks? How was your usual respond towards it? 19. Anything have changed in terms of you putting commitment in pursuing your goal, after reading the book?	Evidence of putting commitment in action

### ***3.7.3.3 Journal entry***

In order to explore participants' perception, emotion and thoughts throughout the program, they were asked to write personal journal entry at 5 points:

1. Before reading the book.
2. After reading chapter 1,2 and 3 (tentatively after week 1)
3. After reading chapter 4 (tentatively after week 2)
4. After reading chapter 5 (tentatively after week 3)
5. After reading chapter 6 and 7 (tentatively after week 4)

## **3.8 PROCEDURE AND DATA COLLECTION STRATEGY**

Every phase in ADDIE model requires sub-studies that involve qualitative or quantitative approaches to meet research objectives. The five phases in ADDIE and its sub-studies will be discussed in detail in this section.

Table 3.13 Data collection strategies according to each ADDIE phases

ADDIE phases		Needs analysis (Analysis phase)	Pre-prototype (Design phase)	Prototype 1 (Development phase)	Prototype 2 (Implementation and evaluation phase)
Participants		Obese participants (n=5)	Experts (n=2)	Experts (n=2)	Product users (readers) among obese participants (n=5)
Module quality criteria	Relevancy	Interview	-	-	-
	Validity	-	Concept walkthrough	Interview	-
	Practicality	-	-	-	Interview
	Effectiveness	-	-	-	Questionnaire assessment, interview and journaling

### 3.8.1 Analysis phase (DDR)

The process in ID starts with problem identification before determining if instruction able to provide solution (Davis, 2013). Davis (2013) stated that in the analysis phase, the tasks include identifying the instructional problem as well as the learner characteristics. This phase aims to define instructional goals and learning objectives of information instruction (Davis, 2013).

In this study, the instructional problem is related to answering “What is the best method of providing psycho-education to clients via bibliotherapy to help them sustain dietary behaviour change?” Information of the learners of this study, the overweight and obese women, are important to establish complete instructional module. The questions to gain that information include “What are the overweight and obese women’s challenges to sustain healthy eating behavioural change?” and “What are the strengths of overweight and obese women that can be built to assist them in maintaining healthy dietary behaviour change?”.

Rosset (1987) model of training needs assessment via purpose based assessment was used to guide this analysis phase. There are six steps to conduct needs analysis.

Table 3.14 Flow of current study based on Training Needs Analysis Model

<b>Steps</b>	<b>Task</b>	<b>This study</b>
1	Identifying context	The context in this study is failure to maintain healthy eating behavioural change that leads to weight loss regain among overweight and obese female university students.
2	Determine the purpose	Deductive variables for each research questions (refer Table 3.15)
3	Selecting the technique of data collection	Strategy of inquiry for each research questions (refer Table 3.15)
4	Planning	Flow of analysis phase
5	Set up detailed planning	<ul style="list-style-type: none"> <li>• Prepare interview protocols for interview sessions</li> <li>• Prepare article literature and documents for review.</li> </ul>
6	Analyse the data and present proposed solution	Conduct thematic analysis of the data and propose module content.

Based on research objectives, the following is the analytical framework for analysis phase.

Table 3.15 Analytical framework of needs analysis phase

No.	Research objectives	Research questions	Deductive variables	Strategy of inquiry
1	To analyse the needs of developing a bibliotherapy module ( <i>Making peace with diet</i> ) for sustained dietary behaviour Change among overweight and obese women.	RQ 1.1: To what extent of the overweight or obese a able to sustain dietary behaviour change after attended any intervention for weight management?	The actual performance (level of ability to sustain dietary behaviour change)	Interview (obese women among young adults)
2		RQ 1.2: What are the psychological processes successfully managed by the overweight and obese who sustain dietary behaviour change?	The desired performance: Psychological skill to sustain dietary behaviour change	Systematic literature review
3		RQ 1.3: What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?	Causes for the performance gap (Barriers to sustain dietary behaviour change)	Interview (obese women among young adults)
4		RQ 1.4: What are the specific strategies of Acceptance & Commitment Therapy (ACT) that used by practitioners in the literature to promote sustained dietary behaviour change?	Elements of ACT strategies to be incorporated in the module.	Document review (literature)

### 3.8.1.1 Interview the overweight or obese females

Interview was conducted among the obese female university students during analysis phase. The inclusion and exclusion criteria of participants for this interview are as in Table 3.16.

Table 3.16 Inclusion and exclusion criteria of interviewee among obese women

No	Criteria	Inclusion	Exclusion
1	Gender	Female	Male
2	Age	18-26 years old	<18 years old >26 years old
3	Body mass index	>24 kgm <sup>-2</sup>	<25 kgm <sup>-2</sup>
4	Weight loss effort	Have tried to lose weight but fail to maintain	<ul style="list-style-type: none"> <li>• Never tried to lose weight.</li> <li>• Have tried to lose weight and successful to maintain the lost weight.</li> </ul>
5	Health status	Healthy	Have non-communicable illness such as diabetes and hypertension.

Semi-structured questions were constructed to explore the challenges and facilitating factors for sustaining dietary behaviour changes among overweight and obese female university students. A number of questions was adapted from previous literature to understand the needs of bibliotherapy module for sustained dietary behaviour change. The quality criteria of the module to be evaluated here is relevancy. The interview protocols was validated by two experts from psychology and counselling background. The validated interview questions can be referred in the previous Table 3.5 under “Instrumentation” subtopic.

### ***3.8.1.2 Systematic literature review***

Systematic literature review (SLR) was conducted to collect evidence of targeted performance related to sustained dietary behaviour change. The research question for this review is “What are the psychological processes successfully managed by the overweight and obese who sustain healthy dietary behaviour change as evidenced by sustained weight loss?” This information would be compared with the actual performance of the overweight or obese being interviewed to identify the performance gap. This gap will be bridged via instructional design of the bibliotherapy module to

assist the overweight or obese cope with thoughts, emotions and sensations that get in the way of meeting the behavioural goals.

This SLR is guided by RepOrting standards for Systematic Evidence Syntheses (ROSES). Even though this review protocol is designed for environment management field, the researcher views it is helpful for counselling research. ROSES provides baseline methodological guidance and suggestions (Haddaway et al., 2018). It also acts as reporting standard. Hence the researcher adapt this review protocol to guide her conduct the SLR. With reference to ROSES, the researcher started with formulating research questions for the review. Then, she explained on the three main strategies for systematic searching which are identification, screening and eligibility. The data extracted for review is analysed via thematic analysis procedure and finally validated by the experts.

The research question for this review is based on the research objective: to analyse the needs of developing a bibliotherapy module for sustained dietary behaviour change. In reference to this research objective, the researcher formulate the research question : What are the psychological processes successfully managed by the overweight and obese who sustain healthy dietary behaviour change as evidenced by sustained weight loss?

The systematic searching strategies include identification, screening and eligibility. Firstly, the identification strategy involves identifying main keywords for the study which are “psychological process”, “overweight and obese” and “sustained healthy dietary behaviour change.” The keywords are selected based on the research question (Okoli, 2015). To enrich the keywords, synonyms, related terms used by past studies and keywords suggested by Scopus are used. The search string for this purpose is shown in Table 3.17.

Table 3.17 Searching string for systematic literature review

No	Database	Search string
1	Scopus	TITLE-ABS-KEY ((strength* OR facilitator* OR factor* OR "psychological process" OR "psychological flexibility" OR "food habit" OR "eating habit") AND (overweight OR obese) AND ("sustain* dietary behavio*r change*" OR "sustain* eating behavio*r change" OR "weight loss maintainer" OR "weight loss maintenance" OR "body weight maintenance" )) )
2	Proquest educational journal	(strength* OR facilitator* OR factor* OR "psychological process" OR "psychological flexibility") AND ("sustain* dietary behavio*r change*" OR "sustain* eating behavio*r change" OR "weight loss maintainer")

After identification process, the process moves to screening strategy. The inclusion and exclusion for screening strategy is presented in Table 3.18.

Table 3.18 Inclusion and exclusion criteria for systematic literature review

No	Criteria	Inclusion	Exclusion
1	Language	English	Other than English
2	Publication timeline	10 years (2011-2021)	Less than 2010
3	Document type	Article journal	Symposium, conference article.

The third strategy of SLR is eligibility. This is done via thorough reading of abstracts. All in all, the systematic searching strategy include identification, screening and eligibility. Figure 3.3 illustrate these three strategies.

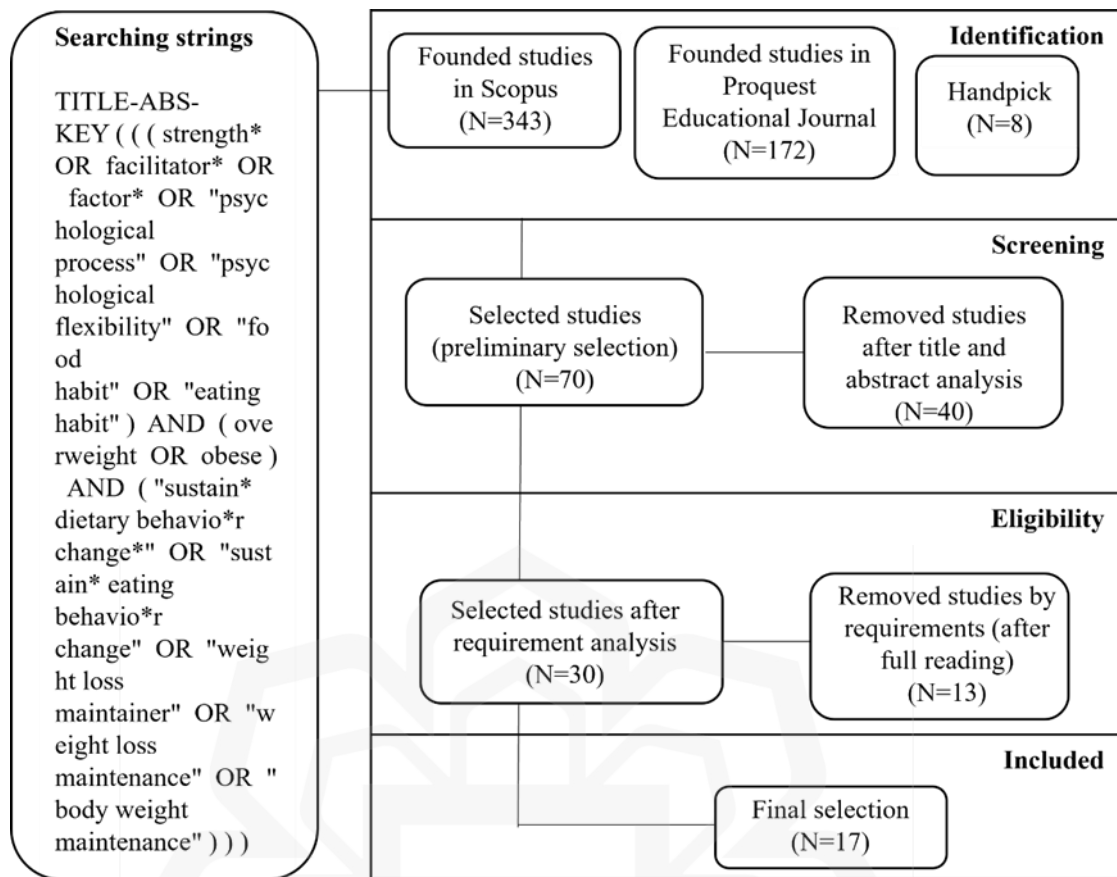


Figure 3.3 Article selections for Systematic Literature Review to inform needs analysis

### 3.8.1.3 Document review to select module elements

To arrive at well-founded design choices, it is crucial to acquire a thorough understanding of the current state of knowledge. This involves conducting a literature review, seeking expert opinions, and scrutinizing existing projects and products that tackle similar issues (Nieveen & Folmer, 2013).

The inquiries made during the analysis of the knowledge base, center around the following aspects (Nieveen & Folmer, 2013): What recent findings from educational research and the relevant subject matter, can inform the design process? Additionally, what related and promising available interventions, could inspire the design?

In order to determine counselling strategies to be implemented in the module, thematic analysis of document review were conducted. The documents used are literature of counselling discipline.

The researcher started with formulating research questions for the review. Then, she explains on the three main strategy for systematic searching which are identification, screening and eligibility. The data extracted for review was analysed via thematic analysis procedure and later validated by the experts in the design phase.

The research question for this review is based on modified PCO. It contains three main concepts: population / problem, context and outcome. Hence, the researcher has included three main elements in the review namely overweight and obese women (population), sustainable dietary behaviour changes (context) and Acceptance and Commitment Therapy (ACT) strategies (outcome). This guide the researcher to formulate its research question “What are the Acceptance and Commitment Therapy (ACT) strategies that promote sustainable dietary behaviour change among overweight and obese women?

Table 3.19 show the searching string and number of journal articles retrieved. A total number of 143 journal articles were generated.

Table 3.19 Identification process of literature review

<b>Database</b>	<b>Searching string</b>	<b>Number of journal articles</b>
Scopus	TITLE-ABS-KEY ( ( "acceptance and commitment therapy" OR "psychological flexibility" ) AND ( "weight loss" OR "weight control" OR "weight maintenance" OR "eating behavio*" OR "eating habit" ) )	110
ProQuest Health and Medical collection	noft(("Acceptance and commitment therapy" OR "psychological flexibility") AND ("weight loss" OR "weight control" OR "Weight maintenance" OR "eating behavio*" OR "eating habit"))	33

After screening using inclusion and exclusion criteria (refer table 3.20) as well as abstract analysis, 49 studies were selected as preliminary study.

Table 3.20 Inclusion and exclusion criteria for screening

<b>Criteria</b>	<b>Inclusion</b>	<b>Exclusion</b>
Publication timeline	2012-2022	2010 and before
Document type	Article (with empirical data) and review.	Conference proceeding, chapters in book, book series, books etc
Language	English	Non-english

Table 3.21 Inclusion and exclusion criteria for eligibility

<b>Criteria</b>	<b>Inclusion</b>	<b>Exclusion</b>
Nature of the study	Focus on ACT strategies to promote sustainable eating behavioural change.	Not focus on ACT strategies to promote sustainable eating behavioural change.

Forty-nine journal articles were read to select those that meet the inclusion criteria (refer table 3.19). After full reading, ten journal articles were selected to inform the design decision of module. The following figure describe the whole process of identification, screening and eligibility.

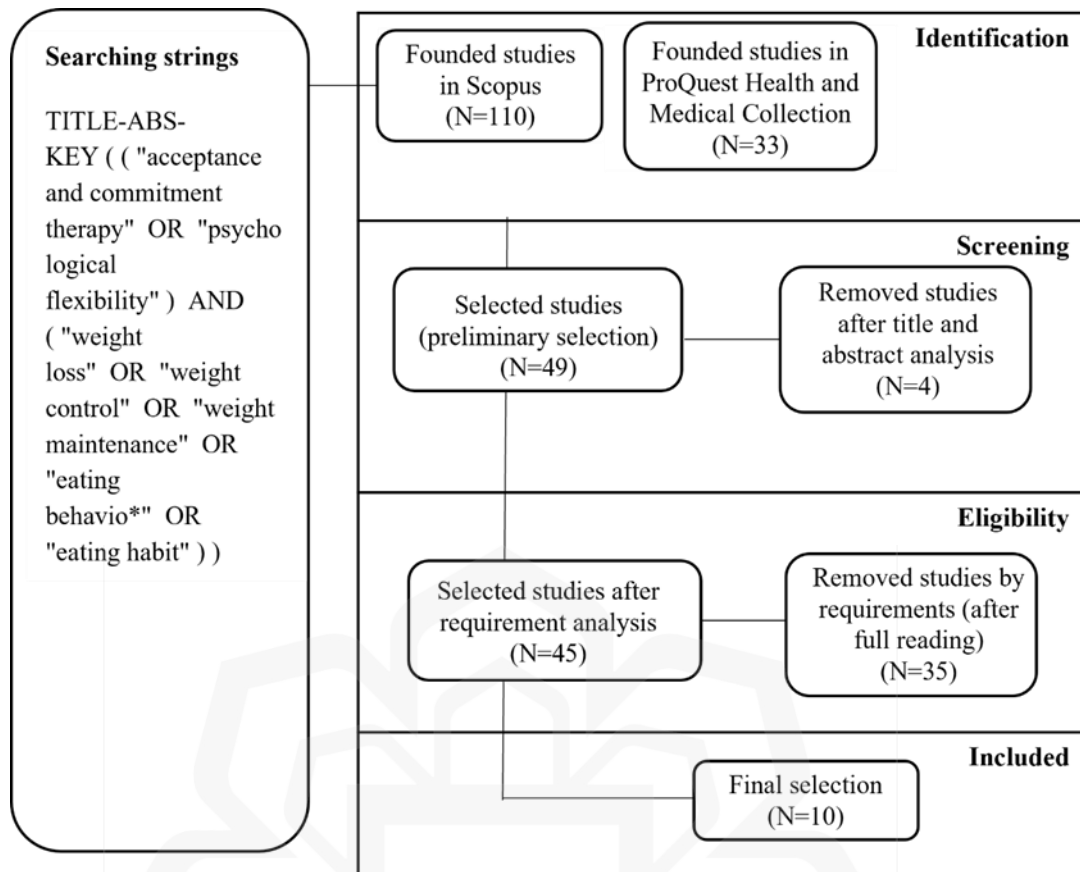


Figure 3.4 Article selections for literature review to inform design decisions

### 3.8.2 Design and development phase (DDR)

In general, the Behaviour Change Wheel (BCW) sets some principles of intervention design (Atkins & Michie, 2015). The following are the behaviour change wheel steps and actions of this study.

Table 3.22 Behaviour change wheel for this study

<b>Main tasks</b>	<b>Behaviour Change Wheel step</b>	<b>Brief description</b>
Understand the behaviour	1. Define the problem	People do not practise healthy eating
	2. Select target behaviour	Choose healthy meal with appropriate portion size.
	3. Specify target behaviour	[who] Overweight or obese female university student [what] should choose healthy meal with appropriate portion size [when] during meal time.
Identify intervention options	4. Identify barriers and facilitators to change	Nil
	5. Identify intervention functions	Education
	6. Identify policy categories	Nil
Identify implementation options	7. Identify behaviour change techniques	Psychological flexibility
	8. Identify delivery mode	A self-help book

According to ADDIE, the design phase requires three tasks which are 1) Creating instructional strategies; 2) Determining learning activities and; 3) Establishing assessment method (Davis, 2013). To meet these three aims, document review of literature database and the Qur'an was conducted during analysis stage.

The designed module are presented to two experts in psychology field via concept walkthrough. Finally, the developed module are evaluated for content validity, construct validity and expected practicality by interviewing experts from counselling field, Qur'an field and dietetics field.

### 3.8.2.1 Design phase (ADDIE)

A concept walkthrough with subject matter experts was held to evaluate the design principles before proceeding with the prototype development. A principle design checklist was used (refer Table 3.9) for the discussion. Two lecturers of psychology department were met (for letter of appointment, please refer to Appendix E). The first lecturer was in Johor so the discussion was held via Zoom tele-conference. Another lecturer was met in her office in the university.

### 3.8.2.2 Development phase (ADDIE)

In the development phase, the tasks include 1) Building the learning content; 2) Building the learning assignment and 3) Building the assessment (Davis, 2013). Specifically, for this study, the learning content comprised of ACT psychological flexibility hexaflex. Two additional contents which are Qur'anic values and healthy eating guidelines were placed as the last two chapters which function as option for readers to read.

The data from the design phase was used as design principles for the product development phase. The table of content for prototype 1 is shown in Table 3.23.

Table 3.23 Table of content for self-help book (prototype 1)

No.	Content
1	Week 1: Introduction
2	Week 2: Contact with present moment
3	Week 3: Cognitive defusion
4	Week 4: Clarity of values
5	Week 5: Acceptance
6	Week 6: Self-as-context
7	Week 7: Committed to action
8	Closure
9	Special topic: 1. Qur'anic values to motivate eating behaviour. 2. Principles of healthy eating

The final product of this phase, referred as prototype 1, was validated by interviewing the experts (letter of appointment, refer to Appendix F). This is to ensure the research finding is empirical and meet the research objectives. Four field experts in the professional group were selected. They are two counsellors who had been practicing Acceptance and Commitment Therapy (E3 and E4), a lecturer who teach Qur'an study (E5) and a lecturer in dietetics field (E6).

The experts were invited to analyze prototype 1. Changes to prototype 1 were made according to feedbacks that require improvement in the content and construct of the book.

### **3.8.3 Evaluation phase (DDR)**

After revising the review by the experts, improvised product was produced (referred as prototype 2). This prototype 2 was further evaluated by implementing it via try-out with overweight or obese female university students. Figure 3.5 show try-out flow chart of implementation and evaluation phase for prototype 2.

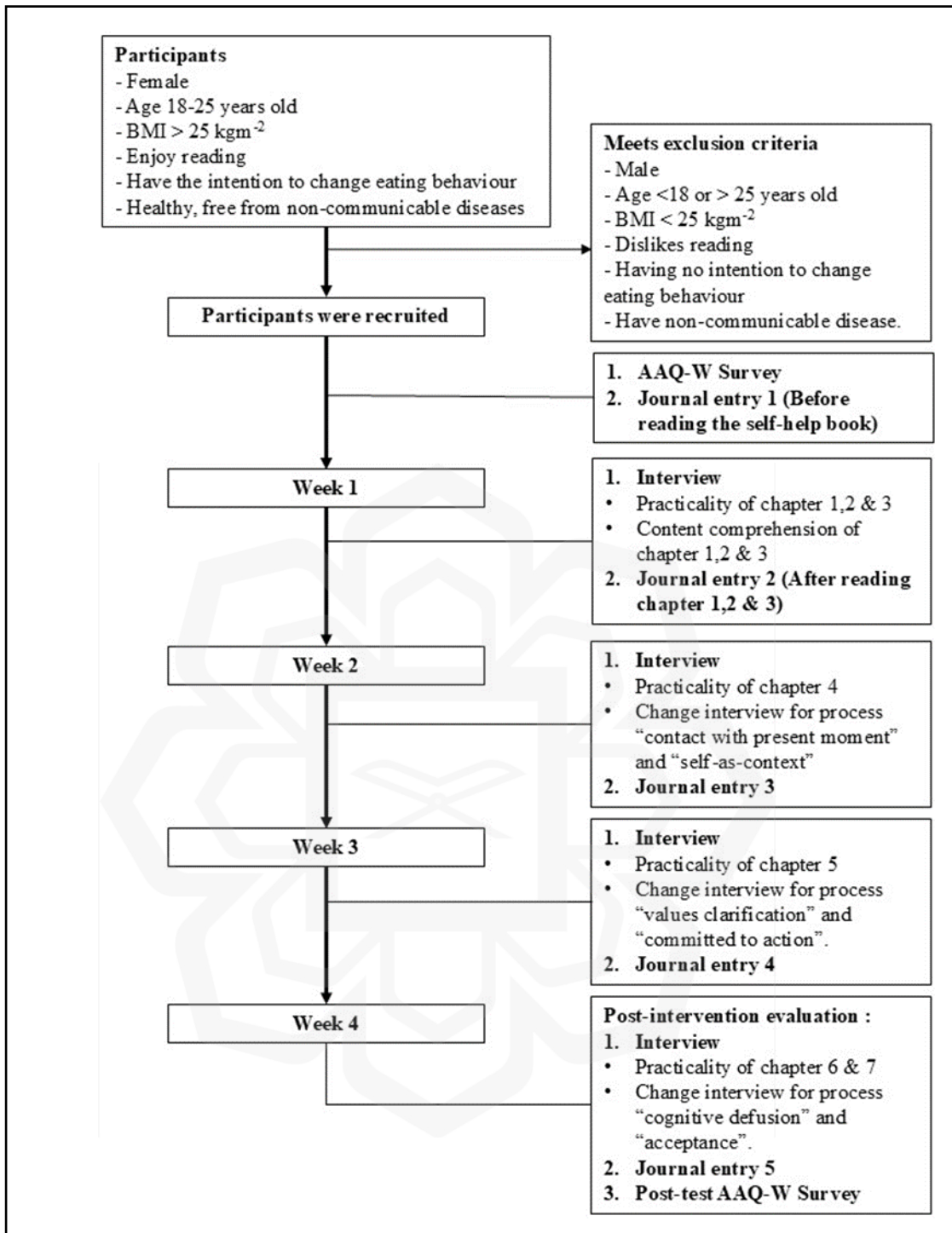


Figure 3.5 Prototype 2 Try-out Flow Chart

### ***3.8.3.1 Implementation phase (ADDIE)***

During the implementation phase, prototype 2 was evaluated for its usability or practicality (Davis, 2013). At this point, a 4-week bibliotherapy program was held. Any undiscovered issues that were not detected during previous formative evaluation were taken into account. This implementation phase aimed to track reading compliance and see whether there was a decline in compliance or worsening of it at any given point in the book. If the implementation proved effective, it was anticipated that these factors would also be helpful in directing changes to the original manuscript for later published versions.

At first, ten participants of overweight or obese female university students were recruited in a program intervention to see the usability of the module. The inclusion criteria for this purposive sampling are as the follows:

1. BMI > 23 kgm<sup>-2</sup>
2. Female
3. Young adults (Age 18-25)
4. Enjoy reading.
5. Have the intention to change eating behaviour
6. Healthy, free from any non-communicable diseases.

See Figure 3.6 below for an outline of the recruitment procedure

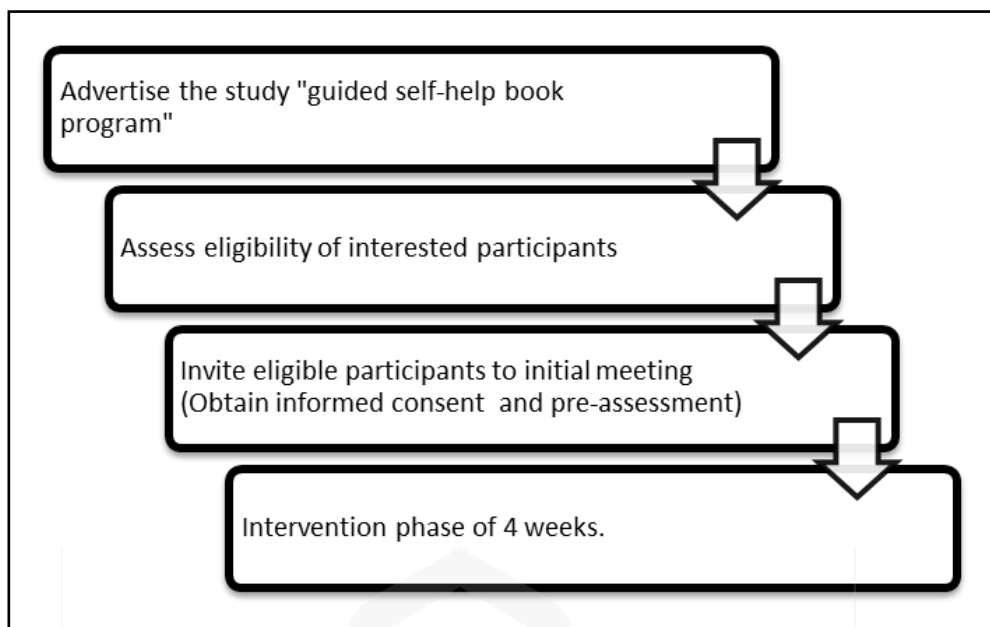


Figure 3.6 Flow chart of recruitment procedure

Ten eligible participants showed interest to participate. During invitation to initial meeting, three of them were unresponsive. So, seven participants were given prototype 2 before the researcher resume the program. While the bibliotherapy program being implemented, another two participants withdraw from the program. In the end, five participants complete reading all chapters and thus the prototype were evaluated by five overweight or obese female young adults.

An “Acceptance and Action Questionnaire for Weight-Related Difficulties (AAQ-W)” was given that serve as a pre-intervention assessment. The participants were provided with the self-help book (“*Making peace with diet*” developed module) to be read within a 4-week period. Throughout the period, the participants were guided once a week with a counsellor that assist them to adhere with the reading task.

Semi-structured interview was held each session to see the response of participants towards the intervention (for interview questions, refer Table 3.11).

### **3.8.3.2 Evaluation phase (ADDIE)**

At the end of the 4-week program implementation, an interview was held. A post-test psychological flexibility questionnaire (AAQ-W) was given. The data collected during implementation phase is analysed to draw a conclusion for the usability of the product.

## **3.9 RESEARCH ETHICS**

The research study protocols are approved by IIUM Research Ethics Committee. Its registered IREC number is IREC 2021-225. IREC's responsibility is to safeguard the rights and well-being of individuals participating in research conducted under the university's authority. This involves ensuring that research involving individuals is conducted safely, with informed consent, and with due consideration for subjects' privacy. The principles of distributive justice guide these efforts, aligning with ethical standards.

All participants of the study were given information sheet so they understand the research procedures that they are involved in. Only candidates who gave their consent (by filling in the approved consent form) were invited to participate in the study (a sample of informed consent form, refer Appendix G).

## **3.10 DATA ANALYSIS**

Overall, this study employed qualitative research method throughout analysis phase, design and developmental phase and evaluation phase. The textual data from interview transcripts and document review were thematically analysed. There are eight stages in qualitative data analyses as illustrated in Figure 3.7 (Ahmad, 2017).

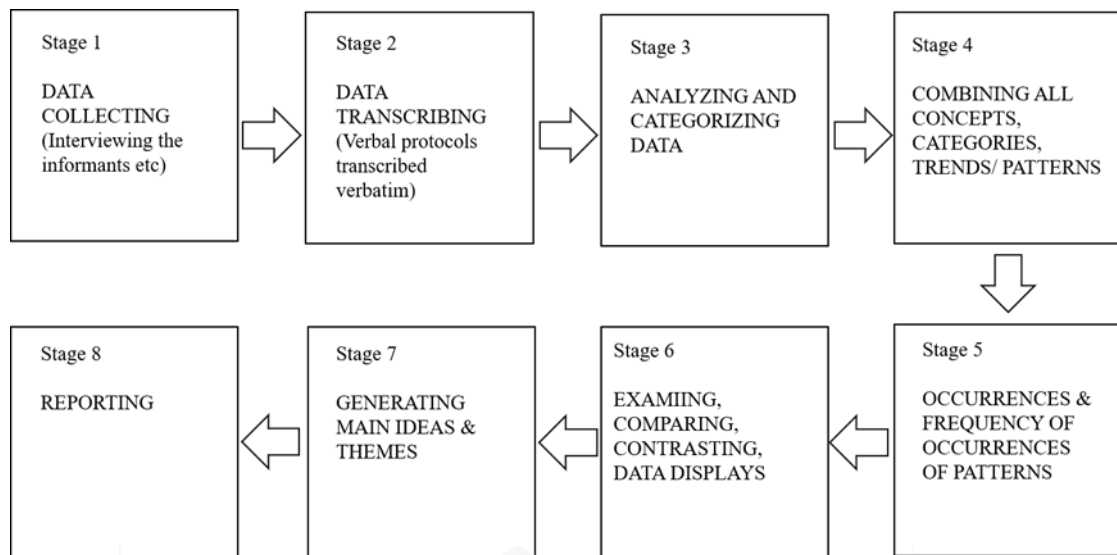


Figure 3.7 Stages in qualitative data collection, analyses and reporting

In terms of data analysis, thematic analysis method is used for identifying, analysing, and reporting patterns within data. The six-phase guide developed by Braun and Clarke (2006) provides a structured, systematic process to ensure the analysis is conducted in a rigorous and transparent manner. The analysis is performed through six iterative phases (Braun & Clarke, 2006).

First, familiarization with the data is achieved by reading and re-reading the entire data set, with initial ideas being noted. Second, initial codes are generated by systematically identifying features of the data that are relevant to the research question and organizing the data extracts related to those features. Third, searching for themes involves sorting and collating the initial codes into potential themes, which represent patterns of meaning across the data set. Fourth, reviewing themes is undertaken to ensure internal consistency within the theme and external consistency across the entire data set, where themes may be split, combined, or discarded. Fifth, defining and naming themes requires the researcher to clearly articulate the essence and scope of each theme, determining the specific "story" each theme tells in relation to the overall research question. Finally, producing the report involves constructing the analytic narrative, telling the story of the data, and providing compelling evidence for the identified themes using vivid data extracts.

### 3.10.1 Data analysis for analysis phase

A systematic literature review were conducted to answer research question “What are the psychological processes successfully managed by the overweight and obese who sustain dietary behaviour change as evidenced by sustained weight loss, in the literature review?” Seventeen themes were generated which were grouped into six of ACT psychological process. Two senior lecturer from department of psychology had reviewed the themes (refer Appendix H). The inter-rater reliability percentage is as following.

Table 3.24 The inter-rater reliability percentage calculation (themes of SLR)

<b>Inter-rater</b>	<b>Percentage of agreement (Total number of agreement / total number of responses x 100%)</b>	<b>Average</b>
Inter-rater 1	$14/17 \times 100 = 82.3\%$	$28/34 \times 100 = 82.3\%$
Inter-rater 2	$14/17 \times 100 = 82.3\%$	

Five interview sessions to 5 participants were also conducted to answer the research question “What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?” The coded themes were reviewed by a senior lecturer from department of psychology and a senior registered counsellor (refer Appendix I). The inter-rater reliability percentage is as following.

Table 3.25 The inter-rater reliability percentage calculation (themes of analysis phase interview)

<b>Inter-rater</b>	<b>Percentage of agreement (Total number of agreement / total number of responses x 100%)</b>	<b>Average</b>
Inter-rater 1	$5/7 \times 100 = 71.42\%$	$12/14 \times 100 = 85.71\%$
Inter-rater 2	$7/7 \times 100 = 100\%$	

### 3.10.2 Data analysis for design & developmental phase

The self-help book prototype that has been assessed by experts was evaluated via interviews. The themes derived from analysis was used to inform the revised product of the next phase. Two interview sessions to two experts were conducted to answer the research question “How can psychological flexibility elements identified as necessary by the needs analysis be incorporated into the module?” The interview questions can be referred in Table 3.10.

The generated coded themes from analysed interview transcripts were reviewed by one senior lecturer and one counselling practitioner from kulliyyah of education (refer Appendix J). The inter-rater reliability percentage is as following.

Table 3.26 The inter-rater reliability percentage calculation (themes of development phase interview)

<b>Inter-rater</b>	<b>Percentage of agreement (Total number of agreement / total number of responses x 100%)</b>	<b>Average</b>
Inter-rater 1	13/15	26/30 x 100 = 86.67 %
Inter-rater 2	13/15	

### 3.10.3 Data analysis for evaluation phase

In implementation phase of this study, an intervention of four-week bibliotherapy program was held among five overweight or obese female university students. A weekly guidance session with the instructor function to guide the participants adhere to task of reading the self-help book.

The participants need to answer a questionnaire assessment which is AAQ-W before the program as pre-test and after the program (as post-test assessment). The data obtained were analysed descriptively by comparing each result individually before and after the test.

Each participants submitted their personal journal entry at five points of time during the program which are before the program, after complete reading chapter 1,2 and 3, after complete reading chapter 4, after complete reading chapter 5 and after complete reading chapter 6 and 7. These data were further thematically analysed and validated via members' check.

A semi-structured interview questions was asked during every guidance session to formatively evaluate participants' response throughout attending the program. This interview transcripts were thematically analysed to answer the research question "What are the practicality of the developed self-help book (Making peace with diet) based on user retrospective and reactions among the participants who attended the four-week bibliotherapy intervention?"

After the implementation ended, at the evaluation phase of this study, an interview was conducted to each participants to see any changes of their eating behaviour after the intervention. This interview was thematically analysed to answer the research question " To what extent does the implementation of self-help book (Making peace with diet) improve participants' level of psychological flexibility to sustain healthy eating behaviour change?"

The generated coded themes from analysed interview transcripts were reviewed by two senior lecturer from kulliyah of education (refer Appendix K). The inter-rater reliability percentage is as following.

Table 3.27 The inter-rater reliability percentage calculation (themes of evaluation phase interview)

<b>Inter-rater</b>	<b>Percentage of agreement (Total number of agreement / total number of responses x 100%)</b>	<b>Average</b>
Inter-rater 1	23/25	46/50 x 100 = 92%
Inter-rater 2	23/25	

### 3.10.4 Summary of data analysis

Summary of data analysis is described in the following table (refer table 3.28).



Table 3.28 Summary of the study data analysis according to research objectives

Research objectives	Central research question	Research questions	Data collection strategies	Data analysis
To analyse the needs of developing a value-based bibliotherapy module ( <i>"Making peace with diet"</i> self-help book) for sustained dietary behaviour change.	1. To what extent developing a <i>"Making peace with diet"</i> self-help book for sustained dietary behaviour change is necessary?	RQ 1.1: To what extent the overweight and obese able to sustain dietary behaviour change after attended any intervention for weight management previously?	Interview	Thematic analysis
		RQ 1.2: What are the psychological processes successfully managed by the overweight and obese who sustain dietary behaviour change (as documented in the literature review)?	Systematic literature review	Thematic analysis
		RQ 1.3: What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?	Interview	Thematic analysis
		RQ 1.4: What are the specific strategies of Acceptance & Commitment Therapy (ACT) that used by practitioners in the literature to promote sustained dietary behaviour change?	Document review (literature database)	Thematic analysis
To develop a validated ACT-based bibliotherapy module ( <i>"Making peace with diet"</i>	2. What are the components needed to develop a value-based self-help book for sustained dietary	RQ 2.1: What are the elements needed in designing a value-based self-help book ( <i>Making peace with diet</i> ) for sustained dietary behaviour change from the experts?	Concept walkthrough	Thematic analysis

self-help book) for sustained dietary behaviour change.	behaviour change?	RQ 2.2: How can psychological flexibility elements identified as necessary by the needs analysis be incorporated into the module?	Interview	Thematic analysis
To evaluate the usability of the developed ACT-based bibliotherapy module (" <i>Making peace with diet</i> " self-help book) for sustained dietary behaviour change.	3. What is the usability of the developed self-help book?	RQ 3.1: What are the practicality of the developed self-help book ( <i>Making peace with diet</i> ) based on user retrospective and reactions among the participants who attended the 4-week bibliotherapy intervention?	Journal entry	Thematic analysis
			Interview	Thematic analysis
		RQ 3.2: To what extent does the implementation of self-help book ( <i>Making peace with diet</i> ) improve participants' state of psychological flexibility to sustain healthy eating behaviour change?	Interview	Thematic analysis
		Acceptance and Action Questionnaire-Weight	Descriptive analysis	

### 3.11 VALIDITY AND RELIABILITY

To guarantee the trustworthiness of the interview transcripts, the recorded discussions were transcribed verbatim, preserving the exact wording without any rephrasing. Incorporating this approach is crucial for enhancing the quality and rigor of the qualitative research process ( Davidson, 2009; Poland, 1995 ).

To evaluate the reliability of the findings, credibility or trustworthiness of the generated themes has to be seek. The trustworthiness of the data includes the elements of credibility, dependability, transferability and confirmability in evaluating the findings (Lincoln & Guba, 1985). For this purpose, an audit trail were made to show the major activities, steps and decisions throughout the study (refer Appendix L).

The generated codes or themes were enhanced through an inter-rater reliability check (Ahmad, 2017). Triangulation is observed via data sources (transcripts, audio recordings), data collection methods (interviews, document review) and persons (experts, overweight / obese participants). Member checking were done to obtain confirmatory feedbacks from the informants.

Table 3.29 Validity and reliability of research study

No	DDR phase	Data collection strategy	Instrument validity and reliability	Data collection validity	Data analysis reliability
1	Analysis	Systematic literature review	Nil	Nil	Inter-rater reliability check
2	Analysis	Interview	Expert validation	Members' check	Inter-rater reliability check
3	Design and development	Interview	Expert validation	Triangulate with open-ended questionnaire	Inter-rater reliability check
4	Evaluation	Interview	Expert validation	Members' check	Inter-rater reliability check
5	Evaluation	Journal entry	Nil	Members' check	Inter-rater reliability check
6	Evaluation	AAQ-W questionnaire	Literature	Nil	Nil

### 3.12 CHAPTER SUMMARY

This chapter outlines the methodology utilized for the research, encompassing the rationale behind the approach, the attributes, and the procedures involved in designing and developing the ACT-based bibliotherapy module for sustained dietary behavioural change (namely “Making peace with diet”). It also delves into participant selection, methods of data collection and analysis, and the data sources utilized for evaluating the self-help book (“Making peace with diet”). Additionally, it offers an in-depth examination of the formative evaluation implemented in this study. Furthermore, various methodological concerns such as ethical consideration and validity and reliability are briefly addressed.



## **CHAPTER FOUR**

### **FINDINGS FOR ANALYSIS PHASE (PHASE 1)**

#### **4.1 INTRODUCTION**

This chapter presents the findings for analysis phase of design and developmental research (DDR). The development of this bibliotherapy module as instruction tool is based on the needs to fill in the performance gap. The performance of interest here is the ability to change eating behaviour and make it as long-lasting habit. The instruction in the form of a self-help book aims to empower the readers with knowledge and skill which will enable them to sustain healthy dietary behaviour change. In this phase, two data collection methods are done which are interview among the overweight and obese and systematic literature review. Three main objectives of this chapter are a) to explore the current ability of the overweight and obese in sustaining dietary behaviour change, b) to identify the performance gap of sustaining dietary behaviour change and c) to determine potential recommendation to narrow the performance gap.

The chapter is divided into seven main sections showing the process which corresponds to the first stage of the ADDIE instructional design model. The second section reports demographic data of the respondents. The third section demonstrates current performance of the overweight and obese in sustaining dietary behaviour change. The fourth section identifies performance gap by reviewing literature about successful weight loss maintainers and explore the barriers among overweight and obese in sustaining dietary behaviour change. The fifth section is a reasoning of the possible direction for developing an instruction to train psychological flexibility, enabling the overweight and obese to sustain dietary behaviour change. Finally, the sixth section compile significant components that serve as guidelines for the next phase: design and development phase.

## 4.2 DEMOGRAPHIC PROFILES OF THE INFORMANTS

The demographic profiles of the informants are important as it gives information about their background and characteristics. For this analysis phase of DDR, the informants recruited are the female obese young adults. This study has selected five obese females to be interviewed. The female young adults play their roles as the study population.

Among the overweight and obese females, they are all young adults with age range between 21 years old and 22 years old. All of them had tried to lose weight by changing their dietary behaviour but failed to maintain the behavioural change which result in regain of lost weight.

Participant AD is a 22-year-old individual with a Body Mass Index (BMI) of 28.5 kgm<sup>-2</sup>, classified as obese I. AD has been attempting to lose weight since the age of 17 and reported having made approximately 10 to 20 weight loss attempts over the years, with each effort followed by subsequent weight regain. The strategies employed included intermittent fasting and, at times, skipping meals and increasing water intake as a substitute for food consumption. However, AD acknowledged that these methods were difficult to maintain in the long term, indicating the unsustainability of such approaches in achieving lasting weight management.

Participant AS is a 22-year-old individual with a Body Mass Index (BMI) of 31 kgm<sup>-2</sup>, categorised as obese II. AS reported having attempted to lose weight on more than ten occasions, but similar to AD, experienced repeated cycles of weight loss followed by weight regain. The primary method used was a low-carbohydrate diet, which involved reducing rice portions and limiting sugar intake. However, AS expressed difficulty in maintaining this approach, as attempts to significantly reduce sugar intake often resulted in dizziness, reinforcing a belief that she was unable to function without sugar. Additionally, AS made efforts to avoid junk food and fast food outlets; however, upon noticing no visible changes in her weight, she reverted to her previous eating habits.

In a similar pattern, participant RN, aged 21 with a Body Mass Index (BMI) of 31.2 kgm<sup>-2</sup>, also experienced repeated cycles of weight loss and regain. RN reported having attempted to lose weight more than ten times, primarily through exercise and fasting. She described that maintaining her dietary control was easier while staying at the university compared to when she returned home, where family routines and environmental factors made adherence more challenging. RN shared that her motivation to lose weight often increased upon seeing slim individuals, which prompted her to modify her eating habits. However, she also noted that the physical discomfort experienced during dietary changes often led her to discontinue her efforts, resulting in a sense of reluctance to sustain the behaviour.

Similarly, participant FA, aged 22 with a Body Mass Index (BMI) of 26.4 kgm<sup>-2</sup>, shared comparable experiences of weight loss and regain. Although she had made numerous attempts to lose weight, FA described two occasions as particularly serious efforts. She followed the Atkins diet during these periods, which initially resulted in weight loss. However, she later regained the lost weight, and even exceeded her previous weight, leaving her with a sense of failure. FA reflected that the chosen method was unsustainable in the long term, as the strict dietary restrictions of the Atkins diet were incompatible with her cultural eating habits and food preferences.

Lastly, Participant SA, aged 22 with a Body Mass Index (BMI) of 30.9, also described a recurring pattern of unsuccessful weight loss attempts. She reported trying to lose weight approximately 10 to 15 times, primarily through intermittent fasting. However, SA expressed that each attempt felt like starting anew, as she was unable to sustain the effort beyond the initial few days. Typically, her commitment would last for about three days before she reverted to her previous eating habits. Consequently, she regained any weight lost during these brief attempts, highlighting the difficulty of maintaining consistency in her weight management journey.

Brief demographic information about the informants are as the following:

Table 4.1 The demographic profiles of the obese females participants

<b>Pseudoname</b>	AD	AS	RN	FA	SA
<b>Age</b>	22	22	21	22	22
<b>Weight</b>	73	74	84	65	65
<b>Height</b>	160	154.5	164	157	146
<b>BMI</b>	28.5	31	31.2	26.4	30.9
<b>BMI status</b>	Obese I	Obese II	Obese II	Obese I	Obese II
<b>Method used to lose weight</b>	Intermittent fasting	Low carbohydrate diet.	Exercise	Atkin's diet	Intermittent fasting.

#### **4.3 CURRENT PERFORMANCE OF THE OBESE IN SUSTAINING DIETARY BEHAVIOUR CHANGE**

The aim of interviewing the obese participants were to understand the current performance with regards to sustaining dietary behaviour change. It is conducted to answer research question 1.1 which is “To what extent the overweight and obese able to sustain dietary behaviour change after attended any intervention for weight management previously?”

The targeted performance of this study is the ability to sustain healthy dietary behaviour change. From the interviews, certain behaviour such as eating vegetables and fruits were able to be maintained up till the present day.

However, other behaviours such as not giving in to cravings and reduce rice portion size seemed hard to commit. The least number of days they were able to sustain healthy dietary behaviour change is 3 days while the longest is up till present day which is more than a year.

#### **4.3.1 Maintain changed eating behaviour in less than 3 days**

The effort of trying to lose weight involve experimenting with new eating behaviour. Some of the behaviours seem detrimental to individual's health, hence unable to sustain. For example, AS tried to cut amount of meal time but she stopped after 3 days as her stomach were inflamed.

“I’ve also tried that (intermittent fasting). But I can’t because of gastric (gastritis) after 3 days. That’s bad. It doesn’t work. I don’t know what to do. Even if I eat low portion size, still nothing have changed.”  
(AS, DU 22)

Changing eating behavior also means trying not eating or drinking one's previous favourite dishes or drinks. Certain people unable to give up their favourite food. This become a challenge to change the behaviour. For example, SA tried cutting down sweetened beverages but he managed to sustain this for only 3 days.

“I only keep doing it at first time. I mean, I keep on doing some kind of method but only commit during the early phase. (For) example, within a week, only the first 3 days I committed. But after that, I lost. I don’t do it anymore. I cut down drinking sweetened beverages only 3 days.”  
(SA, DU 2 & 18)

#### **4.3.2 Maintain changed eating behaviour in less than seven days**

Changing lifestyle to healthier ones are hard. Especially when one unable to find the meaning of those action and only performing it via force. One of the informants, RN, able to increase her physical activity but the habit only sustained in a week.

“I’ve bought equipment including the yoga mat, skipping rope, I joined MCA workout for woman and all those are costly. I joined exercise via online tools like that.” (RN, DU 18)

During the early period, I have high spirit. But later, I am not consistent with the exercise. If I want, I will do. But if I don’t in a week, I won’t do it. So, the time that I really commit is only about one week. After a week, I am not consistent.” (RN, DU 20)

AD and SA also tried to reduce rice portion size but the behaviour ends at the 7<sup>th</sup> day.

“But for rice, I think I still take normal portion *lah*. Something like 3 laddle. Like a lot *lah*. Maybe a week. When I cut the portion of the rice, I tend to snack. So I think it is wasteful.” (AD, DU 26-28)

“About controlling the portion size, it only lasted for a week. I mean, it depends on situation. For example, in the university, I cannot control much. I have awareness to eat ‘*suku-suku separuh*’ but when I buy at college, I am not mindful that I put big portion size. So reducing portion size behaviour only sustain for a week.” (SA, DU 18)

AD also tried to avoid fried food but it doesn’t sustain long because of temptation that she could not handle.

“I tried to avoid fried food but it is very hard, the temptation... Less than a week.” (AD, DU 30-32)

#### **4.3.3 Maintain changed eating behaviour in less than two weeks**

There is certain type of diet that is so much different to the ones that an individual usually practise. Atkins diet for example propose zero carbohydrate intake which force the dieters to avoid rice, vegetables and many carbohydrate food. This kind of diet is so hard to be maintained. For example, FA tried to avoid carbohydrate intake but she can only sustain with it for two weeks.

“Practise Atkins diet, it last for 2 weeks only. I really suffer.” (FA, DU 12)

She had also been improving her water intake by drinking more but the behaviour only last for two weeks.

“In terms of diet, after that Atkins diet, I still eat vegetables. But I no longer drink a lot of water. But I am happier after I quit my diet” (FA, DU 22)

#### **4.3.4 Maintain changed eating behaviour in less than a month**

Environment really impact the dieters. There are seasonal factor which support dietary behaviour change. However, if the motivational factors are external, not from internal drive, such behaviour could not sustain as well. For RN, Ramadan time really helped her to change her behaviour in terms of cutting down carbohydrate intake like rice and sugar. However, after Ramadan month, she returned to old habit.

“Through out that one month, during the breaking fast time, my sense to eat food is so high. But because I am dieting with all other people, all my friends were doing the same thing. So the challenges is lesser, I don’t drink sweetened beverages.” (RN, DU 40)

#### **4.3.5 Sustain healthy eating behaviour up till present day**

While many of the healthy eating behaviour unable to sustain, some has become habits which make it stick until this present day. The informants commented that drinking enough plain water and eating vegetables are behaviours that are easy to instill and become habit.

AD had improved her plain water intake by drinking 2-3 litre a day. She has this habit till now.

“As for the water, I think I still keep it until today. If not 3 litre, I think about 2 litre a day” (AD, DU 26)

AD, FA and SA improve their vegetables intake by eating more. They still eat a lot of vegetables today.

“I used not to eat vegetables but after I try to diet, until now I still eat a lot of vegetables.” (AD, DU 26)

“In terms of food, after the atkins diet, I still apply... like vegetables.” (FA, DU 22)

“In terms of eating a lot of vegetables, I always do it. I mean, it is long-lasting up till now.” (SA, DU 18)

#### **4.4 VALIDATE THE PERFORMANCE GAP**

In order to validate the performance gap in terms of ability to sustain dietary behaviour change, two datas are required. The first data is the desired performance which is the psychological process successfully managed by those who sustain healthy dietary behaviour change. The second data is the causes for the performance gap among informants who failed to sustain dietary behaviour.

The first data was obtained through systematic literature review while the second data was obtained via interview among the obese participants of study population.

##### **4.4.1 Confirm the desired performance through systematic literature review**

The aim of systematic literature review is to confirm the desired performance among the overweight and obese individuals. It is conducted to answer research question 1.2 which is “What are the psychological processes that are successfully managed among the overweight and obese who sustain healthy dietary behaviour change?”

The first stage of this analysis is to identify the psychological processes that the overweight and obese able to manage which enable them to be successful in sustaining their healthy dietary behaviour change. Hence, papers that describe successful factor or dieters characteristics among those who maintain weight loss changes are selected.

The systematic literature review examined 17 papers related to this study. In this part, the analysis of the content of the papers is explained. The themes of psychological processes are extracted and summarised in Table 4.2.

Table 4.2 Themes of psychological process successfully managed by those who sustained dietary behaviour change

No	Psychological process	Themes	Subthemes	Author (s)
1	<b>Acceptance</b>	Good emotional control	Regulation and good emotional control.	(Reilly et al., 2015)
			Low hedonic response to food	(Brockmeyer et al., 2016)
2	<b>Acceptance</b>	Positive body image	Accept body image	(Santos et al., 2015)
3		Not constrained with internal experiences	Skillful in dealing with obstacles when psychological resources are limited.	(Kwasnicka et al., 2019)
4	<b>Cognitive defusion</b>	Avoiding deprivation	Unhook from deprivation thoughts	(Mckee et al., 2013)
5		Helpful perception	Perceive fewer exercise barriers	(Ostendorf et al., 2021; Santos et al., 2015)
6	<b>Contact with present moment</b>	Awareness of choices of action	Conscious that weight maintenance is in their lives	(Mckee et al., 2013)
			Solid awareness of portion sizes and nutrient content of foods	(Reilly et al., 2015)
			Weight and behaviour awareness	(Kwasnicka et al., 2019)
7		Consistent use of self-monitoring	Food diary	(Milsom et al., 2011; Mckee et al., 2013; Peterson et al., 2014)
			Self-monitoring makes increased attention, awareness and accountability	(Mckee et al., 2013)

			Keep track of exercise	( Milsom et al., 2011; Kwasnicka et al., 2019; Ostendorf et al., 2021)
			Weight monitoring	(Abildso et al., 2014; Milsom et al., 2011)
8	<b>Self-as context</b>	Flexible restraint of eating	Allow occasional managed lapses	( Reilly et al., 2015; Kwasnicka et al., 2019)
			Flexible in dietary habits	(Sairanen et al., 2014)
9		Effective coping skills	Move on from failures	(Mckee et al., 2013; Kwasnicka et al., 2019)
10		Self-compassion	Non-food reward system for motivation	(Kwasnicka et al., 2019)
11		Less internalized weight stigma	Less internalized weight stigma	(Puhl Quinn, Weisz, & Suh, 2017)
12	<b>Values</b>	Motivation	High exercise autonomous motivation	(Ostendorf et al., 2021; Santos et al., 2015)
			Satisfaction with weight loss outcome	(Kwasnicka et al., 2019)
			Health concern	(Kwasnicka et al., 2019; Reilly et al., 2015;Soini, Mustajoki, & Eriksson, 2018)
13		Human strength	Perseverance and willpower	(Reilly et al., 2015)
	Internal locus of control		(Anastasiou, Fappa, Karfopoulou, Gkza, & Yannakoulia, 2015)	
	Self-efficacy		(Abildso et al., 2014)	
14		Adherence to values that motivate action	Follow rules and pick food based on nutritional content	(Christensen et al., 2017)

			Act on beneficial behaviours and actions	(Reilly et al., 2015)
15	<b>Commitment</b>	Maintained commitment to goal	Set goal for exercise and food intake.	(Kwasnicka et al., 2019; Mckee et al., 2013)
16		Commit to do behavioural control	Continue to weight loss maintenance techniques	(Evans et al., 2019)
			Restrained eating	(Levinge et al., 2020; Ostendorf et al., 2021)
			Strategizing techniques	(Evans et al., 2019; Reilly et al., 2015)
			Use behavioural self-management techniques	(Levinge et al., 2020; Milsom et al., 2011; Reilly et al., 2015)
			Instrumentalization of eating	(Christensen et al., 2017)
			Organisation and preparation	(Mckee et al., 2013; Reilly et al., 2015; Kwasnicka et al., 2019)
			Strong food-related inhibitory control	(Brockmeyer et al., 2016)
			No comfort eating	(Christensen et al., 2017)
17		Form habit that commit to healthy behaviour	Healthy eating	(Abildso et al., 2014; Kwasnicka et al., 2019; Milsom et al., 2011; Soini et al., 2018; Christensen et al., 2017; Puhl et al., 2017a)
	Physically active		(Abildso et al., 2014; Kwasnicka et al., 2019; Reilly et al., 2015; Soini et al., 2018)	

#### ***4.4.1.1 Psychological process 1: Acceptance***

Accepting private events is an alternative to experiential avoidance. It involves actively and consciously embracing private events triggered by past experiences, without trying to change their nature or how often they occur, particularly if such efforts might cause psychological distress. The aim of "acceptance" is to enhance willingness and the ability to respond flexibly, rather than solely reducing emotional reactions. Hence, it functions as a means to enhance actions guided by personal values.

#### **Not constrained with internal experiences**

In one of the study, one of the five main themes underpinning successful weight loss maintenance is being skillful in managing psychological process which enable people to deal with obstacles when they are stressful, bored or perceived lack of time (Kwasnicka et al., 2019). When their cognitive resources were constrained such as feeling stressed or emotional, all of the maintainers reported having difficulty maintaining their weight (Kwasnicka et al., 2019). This shows that when cognitive resources are scarce, people are more likely to engage in impulsive behaviours that mirror previous habits (Kwasnicka et al., 2019). Hence the study suggests that interventionists should provide interventions that assist individuals in managing temptations and overcoming obstacles, especially when their psychological resources are depleted.

#### **Good emotional control**

Emotional eating, such as comfort and reward eating, is a significant predictor of successful or unsuccessful weight maintenance. Reilly and colleagues (2015) discover regulation and good emotional control among the strong themes of lessons within the weight maintenance group. During the weight loss phase, participants with relatively strong food-related inhibitory control and a low hedonic response to food were the most successful in losing weight (Brockmeyer et al., 2016).

## **Positive body image**

Women who had a more positive body image were more likely to lose 3 to 5% of their body weight after the 1-year intervention (Santos et al., 2015). This long-term weight maintenance imply rather than seeking to directly change actions, it may be more effective to target psychological issues that underpin them (Santos et al., 2015). This include managing body image and motivation quality which affect physical activity and eating regulation.

### ***4.4.1.2 Psychological process 2: Cognitive defusion***

According to Relational Frame Theory, altering the functions of thoughts in our lives does not necessarily require changing the content of those thoughts (Luoma et al., 2017). ACT suggest “cognitive defusion” which involves establishing nonliteral contexts where language is perceived as an active, ongoing relational process, shaped by history and existing in the present moment. Simply put, it means observing thoughts with a dispassionate curiosity. By creating this nonliteral context, the link between words and actions is loosened, enabling greater behavioural flexibility. Thus, people with “cognitive defusion” skill are not letting the words drive or dicatate their behaviour.

## **Avoiding deprivation**

The maintainers constantly emphasised how deprivation feelings can lead to 'self-destructive' dieting behaviour (Mckee et al., 2013). The maintainer give example of thoughts such as “if I don't eat this now, I'll never be able to eat anything else like it again,.'. If a person is hooked with this thought, it make them feel deprived of that particular food and trigger unplanned eating (Mckee et al., 2013). Hence, they frequently stressed the necessity of avoiding thoughts of 'missing out' or 'deprivation.' (Mckee et al., 2013).

### **Perceive fewer exercise barriers**

Perceiving fewer exercise barriers was partially compensating for women with weaker autonomous motivation and yet able to maintain weight loss (Santos et al., 2015). In another study by Ostendorf and colleagues (2021), the maintainers showed greater reductions in perceived barriers to exercise over 24 months.

#### ***4.4.1.3 Psychological process 3: Contact with present moment***

ACT encourages continuous, nonjudgmental engagement with psychological and environmental experiences as they unfold. The aim is to cultivate present-moment awareness, where attention is directed to the present reality in a flexible, fluid, and voluntary manner. Being fully immersed in the present moment enables individuals to be adaptable, responsive, and attuned to the opportunities for growth inherent in their current circumstances. Compared to dwelling on a conceptualized past or future, present-moment awareness is more immediate and responsive, and less influenced by abstract thinking and attachment. In instances where contact with the present moment is lacking, behaviour tends to be driven more by fusion, avoidance, and rationalization, thereby perpetuating patterns of behaviour similar to those observed in the past.

#### **Awareness of choices of action**

The people who maintain their weight are conscious that weight maintenance has become an inextricable element of their lives (Mckee et al., 2013) . They had a solid awareness of portion sizes and nutrient content across a wide range of foods (Reilly et al., 2015). In a study by Kwasnicka and colleagues, the majority of participants mentioned an identity transition, frequently from being a perpetual dieter to accepting a new way of life that included weight and behaviour awareness (2019).

## **Consistent use of self-monitoring**

Consistent use of self-monitoring is one of the factors underpinning success in weight maintenance (Mckee et al., 2013). Self-monitoring were frequently mentioned evidenced by the majority of weight maintainers discussed keeping track of what they ate, how active they were, and how much weight they weighed (Kwasnicka et al., 2019). The majority of the maintainers mentioned that they keep track of their weight, particularly through the use of meal diaries. They frequently mentioned that they had learned from previous experience that keeping track of what they ate was critical to weight maintenance success as this help them to be honest to themselves and aware of their choice of actions so they will stay on track (Mckee et al., 2013). This is due to the increased attention, awareness, and accountability that comes with writing things down—all of which are important for effective self-regulation (Mckee et al., 2013).

Successful long-term weight maintainers reported to self-monitor their food intake, plan meals earlier and choose lower calorie food (Milsom et al., 2011). Monitoring food intake using food diary raises awareness of behaviour and this help the maintainers refrain from mindless consumption (Mckee et al., 2013). Participants who self-monitored both frequently and consistently kept their weight changes more effectively than those who did not (Peterson et al., 2014). Self-monitoring that is continuous and frequent tends to aid in the maintenance of weight loss by assisting participants in sticking to daily calorie intake objectives (Peterson et al., 2014).

Setting a goal on how much should an individual exercise per day is one of the way to monitor their exercise behaviour among successful weight loss maintainers (Kwasnicka et al., 2019). Over the course of 24 months, maintainers had higher increases in device-measured physical activity, autonomous motivation for exercise, and lower barriers to exercise than the regainers (Ostendorf et al., 2021). In a study by Milsom and colleague ( 2011) , the frequency of physical activity self-monitoring approached significance which suggest it as essential tool for weight loss and long-term maintenance. It's possible that successful weight maintainers use self-monitoring as a cue to keep their "old learning" from returning when a weight loss programme stops (Milsom et al., 2011).

Successful weight loss maintainers reported weighing themselves with greater frequency than unsuccessful ones (Milsom et al., 2011). Self-weighing at least once a week, as opposed to less frequent weighing, was found to be predictive of successful maintainers (Abildso et al., 2014).

#### ***4.4.1.4 Psychological process 4: Self-as-context***

From the perspective of Relational Frame Theory (RFT), the self is perceived more akin to a context or stage for experiences rather than being an experience in itself. ACT assists individuals in connecting with this perception of self-as-context—an ongoing and secure “I” from which experiences are observed. It is a self that encompasses but is also separate from those experiences. The objective of seeing self as a context is to support individuals in cultivating a stronger sense of themselves as observers or participants in their experiences, distinct from the specific experiences occurring in the present moment.

#### **Flexible restraint of eating**

The weight loss maintenance was improved by prioritising goals and allowing for occasional managed lapses (Kwasnicka et al., 2019). Individuals who are willing to accept failure on a regular basis are more likely to continue their dietary behaviour over time. They accounted for it in their plans and were more adaptable when something unexpected occurred. Accepting temporal conditions and treating exceptional moments as a once-in-a-lifetime occurrence aided weight loss maintenance (Kwasnicka et al., 2019). This is the ability to take perspective from another stand of values which enable an individual to accept the occasional non-adherence to weight maintenance routine for the sake of fulfilling other values domain. Hence, goal conflicts can either help or hinder behaviour performance (Kwasnicka et al., 2019).

There are long-term advantages to becoming more flexible in dietary habits rather than being strict (Sairanen et al., 2014). This is for a better psychological well-being. Instead of harsh regulations and avoidance measures, methods that promote awareness of one's feelings and behaviours may be beneficial (Sairanen et al., 2014). Reilly and colleagues (2015) discover that the maintainers establish tight dietary consumption during the week, with more relaxed eating patterns permitted on weekends. They acknowledge that “treats” were sometimes necessary (Reilly et al., 2015).

### **Effective coping skills**

The maintainers appeared to grasp that a single lapse does not equal total dietary failure, and they were able to move on from failures and continue to meet their weight-maintenance goals (McKee et al., 2013). They seemed to think of a lapse as something that would pass, so they made dietary adjustments and increased exercise to compensate (McKee et al., 2013). Participants who maintained their weight loss were more likely to allow for special occasions or infrequent indulgences, compensating for these with higher physical activity or better self-monitoring on other days (Kwasnicka et al., 2019). They were able to see these experiences as a part of internal experiences that do not define themselves as a whole. In contrast, unsuccessful maintainers described special events and treats as failures, disappointments, and negative emotional responses which lead to self-stigma and emotional eating (Kwasnicka et al., 2019).

### **Self-compassion**

Successful maintainers frequently highlighted non-food incentives that they used to motivate themselves to maintain their weight (Kwasnicka et al., 2019). They developed a non-food reward system that was linked to weight loss outcome satisfaction (Kwasnicka et al., 2019).

### **Less internalized weight stigma**

Internalized and experienced weight stigma were different among the weight-loss maintenance groups (Puhl et al., 2017). In comparison to weight-loss regainers, weight maintainers reported less internalised and experienced weight stigma (Puhl et al., 2017). For weight regainers, a higher subjective weight category was linked to worse physical health and increased stigma, but not for weight-loss maintainers (Puhl et al., 2017) . Internalized negative weight-based attitudes and self-blame may be particularly detrimental to personal efforts to maintain weight loss, regardless of whether or not overt episodes of weight-based mocking, unfair treatment, or discrimination occur (Puhl et al., 2017).

#### ***4.4.1.5 Psychological process 5: Values***

Values represent selected characteristics of actions that cannot be possessed as tangible objects but can be expressed continuously through actions of both being and doing. ACT invites individuals to momentarily pause amidst the challenges of daily life and contemplate what brings meaning to their existence which is to explore the broader potentials that can elevate their struggles and direct them towards purposeful action.

### **Motivation**

High exercise autonomous motivation at the end of the 1-year intervention was the biggest predictor of 3-year weight loss maintenance among women who had lost 10% or more weight (Santos et al., 2015). Women with a negative body image but high motivation were more likely to keep weight off than women with a negative body image but low motivation (Santos et al., 2015). The effect of bad body image was offset by high intrinsic motivation for exercise (Santos et al., 2015). In another study, it was found that the maintainers had higher levels of device-measured physical activity and autonomous motivation for exercise as compared to the weight regainers (Ostendorf et al., 2021).

This type of people in another study also highlight the importance of personal motivation above external incentive (Kwasnicka et al., 2019). Satisfaction with weight loss outcomes was cited by all participants as an important motivator, such as being able to wear smaller sizes and being more active (Kwasnicka et al., 2019). Satisfaction with the results was cited as a key factor in maintaining drive to lose weight.

Participants frequently mentioned how much fun they had maintaining their weight loss by trying new sports, cooking nutritious meals, and playing with their grandchildren (Kwasnicka et al., 2019).

Being slender was an important aspect among successful weight loss maintainers, and it was motivated by vanity, health, and a desire to be a good role model for their children (Reilly et al., 2015). Internal motivators such as a desire to be healthy and fit or happiness with a new lower weight were mentioned (Kwasnicka et al., 2019). A study by Soini and colleagues (2018) found that health and appearance-related concerns were the two most commonly stated motivator motivations for weight loss.

### **Human strength**

Several themes with regards to human strengths among the successful weight maintenance are perseverance and willpower (Reilly et al., 2015). Successful weight loss maintainers had strong willpower, which included refusing meals supplied by others and weighing items to ensure portion proportions were adhered to (Reilly et al., 2015). Weight maintenance was reported as an "absolute priority" in primary weight maintainers group, driven in equal parts by vanity and health (Reilly et al., 2015). The successful weight maintainers prioritised exercise and were persevere in maintaining a high level of activity (Reilly et al., 2015). Within this group, prominent themes emerged such as willpower, balance, regulation, good emotional control, and resilience (Reilly et al., 2015).

The findings by Anastasiou and colleagues ( 2015) imply that maintaining weight loss is linked to an internal locus of control. Internals said they lost weight more regularly on their own, but externals said they dropped weight mostly with expert help (Anastasiou et al., 2015). In another study, the majority of long-term weight-loss maintainers did so without the assistance of others (Soini et al., 2018). Individuals with an internal locus of control have a strong sense that they can influence their own health by exerting control over their own behaviours; as a result, they take appropriate steps to lose weight and prevent regaining weight (Anastasiou et al., 2015). Regainers, on the other hand, feel that external circumstances influence their weight and health; this attitude leads them to seek weight-control assistance from a professional (Anastasiou et al., 2015).

Sustaining weight loss requires a person's self-efficacy, or belief in their capacity to carry out an activity (Abildso et al., 2014) . The perception of how easy (or difficult) it was to stick to a regular exercise plan was linked to weight loss maintenance (Abildso et al., 2014).

### **Adherence to values that motivate action**

According to the exploratory study of the role of control and choice in eating, participants had widely different techniques for structuring and regulating their food choices (Christensen et al., 2017). Successful weight loss maintainers tended to be quite structured; they followed rules and picked food based on nutritional content rather than personal preferences or palatability ( Christensen et al., 2017). The successful weight-maintainers were quick to act on what they saw to be beneficial behaviours and actions(Reilly et al., 2015). For the most part, they described maintaining their weight as a way of life (Reilly et al., 2015).

#### ***4.4.1.6 Psychological process 6: Commitment***

Commitment constitutes a crucial element within Acceptance and Commitment Therapy (ACT). In therapeutic contexts, committed action is evident when individuals actively participate in behaviours that contribute to their clinical progress. These behaviours are aligned with the person's values and are undertaken without being hindered by problematic thoughts, unconstructive rules, or other verbal stimuli. Committed action occurs when the individual remains present in the moment and accepts the physiological and emotional reactions experienced within that context.

#### **Maintained commitment to goal.**

The weight maintainers often set goal for activities and healthy eating like the number of gymnasium visits per week or number of calories per day (Kwasnicka et al., 2019). Setting weight maintenance goals was a common theme among the maintainers, who framed weight maintenance as a lifestyle change rather than a 'diet' change (Mckee et al., 2013). By redefining themselves and their behaviours as long-term or lifestyle-related, weight-maintainers unwittingly ensured their weight-maintenance future (Mckee et al., 2013).

#### **Commit to do behavioural control**

Effective weight loss maintenance factors point to the significance of continuing to apply dietary and other weight loss maintenance techniques, especially in the face of a lapse, as well as the need to address dysfunctional eating behaviours (Evans et al., 2019). Absent or infrequent loss of control and binge eating are among the significant predictors of better maintenance (Evans et al., 2019). Restrained eating is essential for long term weight loss and maintenance (Levinge et al., 2020; Ostendorf et al., 2021). Maintainers showed significant improvements in eating self-efficacy, cognitive restraint, disinhibition, and involvement in weight management behaviours (Ostendorf et al., 2021).

The absence of a momentary lapse during the weight loss effort, the absence of frequent loss of control and binge eating, and the employment of additional dietary methods in maintenance were all factors linked with effective weight loss maintenance (Evans et al., 2019). Using weight loss maintenance tactics actively and regularly may help to restrict or avoid regaining weight (Evans et al., 2019). This strategizing theme among maintainers is also evident in a study by Reilly and colleagues (2015). The strategies implemented by the maintainers include using calorie counting applications on phones, and checking portion sizes on a digital scales (Reilly et al., 2015).

The primary weight maintenance group indicated permitting themselves stricter guidelines during the week in order to have more relaxed standards during the weekend (Reilly et al., 2015). The majority of them never let themselves gain more than a small amount of weight before taking measures to lose it (Reilly et al., 2015). Successful long-term weight maintenance participant reported using a variety of behavioural self-management techniques such as self- monitoring of weight, intake, and calories, planning meals ahead of time, and choosing lower-calorie food options (Milsom et al., 2011). According to a study by Christensen and colleagues (2017), weight reducers did not practise comfort eating as compared to weight regainers. Levinge, Stapleton and Sabot (2020) found that restrained eating significantly increased the likelihood of predicting successful long-term weight loss

Instrumentalization of eating is a concept which the maintainers have made their eating behaviours as tools to maintain weight loss (Christensen et al., 2017). It is a term that refers to a series of activities that reduce choice and externalize control. In the study, this behavioural restraint include calorie counting, nutrient-content-based food choice and using monitoring tools (Christensen et al., 2017). An everyday pattern characterised by systematisation and fixed rules that drives food choice by nutritional content rather than hedonic worth, supplemented with controlled and limited treats on special occasions appears to be especially beneficial (Christensen et al., 2017).

The success of weight maintenance hinged on organisation and preparation. Food buying had to be done on a regular basis to ensure that cabinets, refrigerators, and freezers were fully stocked with healthy meals (Reilly et al., 2015). Almost all meals were arranged in advance at home and at work whereas dining out was a once-in-a-while treat rather than a regular one (Reilly et al., 2015). A number of the weight loss maintainers described how they planned ahead of time to avoid being "taken off guard" and having to make unhealthy decisions (Mckee et al., 2013). They frequently emphasised the need of having a consistent routine in order to maintain their weight (Mckee et al., 2013). Planning for specific scenarios, allowing for treats and special occasions, was frequently related with successful weight loss maintenance (Kwasnicka et al., 2019).

### **Form habit that commit to healthy behaviour**

Habit formation is one of the five main themes underpinning successful weight loss maintenance (Kwasnicka et al., 2019). The habits were learned during the weight loss period and are of two main domains which are healthy eating and be physically active (Kwasnicka et al., 2019). The advantage of habit is that it require less executive control capacity than self-controlled behaviours. Habit formation is related to self-efficacy. The ability to maintain a healthy BMI over time was linked to self-efficacy for healthy eating (Ostendorf et al., 2021; Seguin et al., 2017).

When it came to healthy eating, the successful weight loss maintainers reported regular healthy meals, checking food labels, automatically shopping for good items, and choosing healthier and lower calorie selections from menus (Kwasnicka et al., 2019). Other than that, reduction in fast carbohydrates intake (Soini et al., 2018), limit evening snacking (Abildso et al., 2014), increase vegetable intake (Milsom et al., 2011; Soini et al., 2018), plan meals in advance (Milsom et al., 2011), regular meal pattern (Christensen et al., 2017; Puhl et al., 2017b; Soini et al., 2018) and limit portion size (Abildso et al., 2014; Soini et al., 2018) were success factors among participants who were able to maintain weight loss.

Being physically active everyday is predictor of weight loss maintenance proven by the maintainers who adhere to the 300 min/week physical activity (Abildso et al., 2014). Moderate and regular exercise played a significant role for weight maintenance and weight loss (Reilly et al., 2015). In another study, leisure time and commuting physical activity contribute to successful long-term weight maintenance (Soini et al., 2018) . Participants mentioned being active as part of their daily routines, using active transportation such as walking and cycling, taking the stairs instead of the escalator, and incorporating regular exercise into their daily routines (Kwasnicka et al., 2019).

#### **4.4.2 Identify the causes for the performance gap through interview**

The questions that were asked during the interview session are intended to answer research question 1.3 which is “What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?”

This section will present the data with regards to challenges to sustain healthy dietary behaviour change among overweight and obese individuals. The informants are the obese young adults. Five individuals were interviewed by the researcher. Since the study is based on Acceptance and Commitment Therapy (ACT) model, the themes for causes of the performance gap are conceptualised through psychological rigidity framework.

The study attained perspectives from the obese informants. The overall findings from Malaysian young adults informants discovered at least two causes of gap performance for each area of six psychological rigidity process.

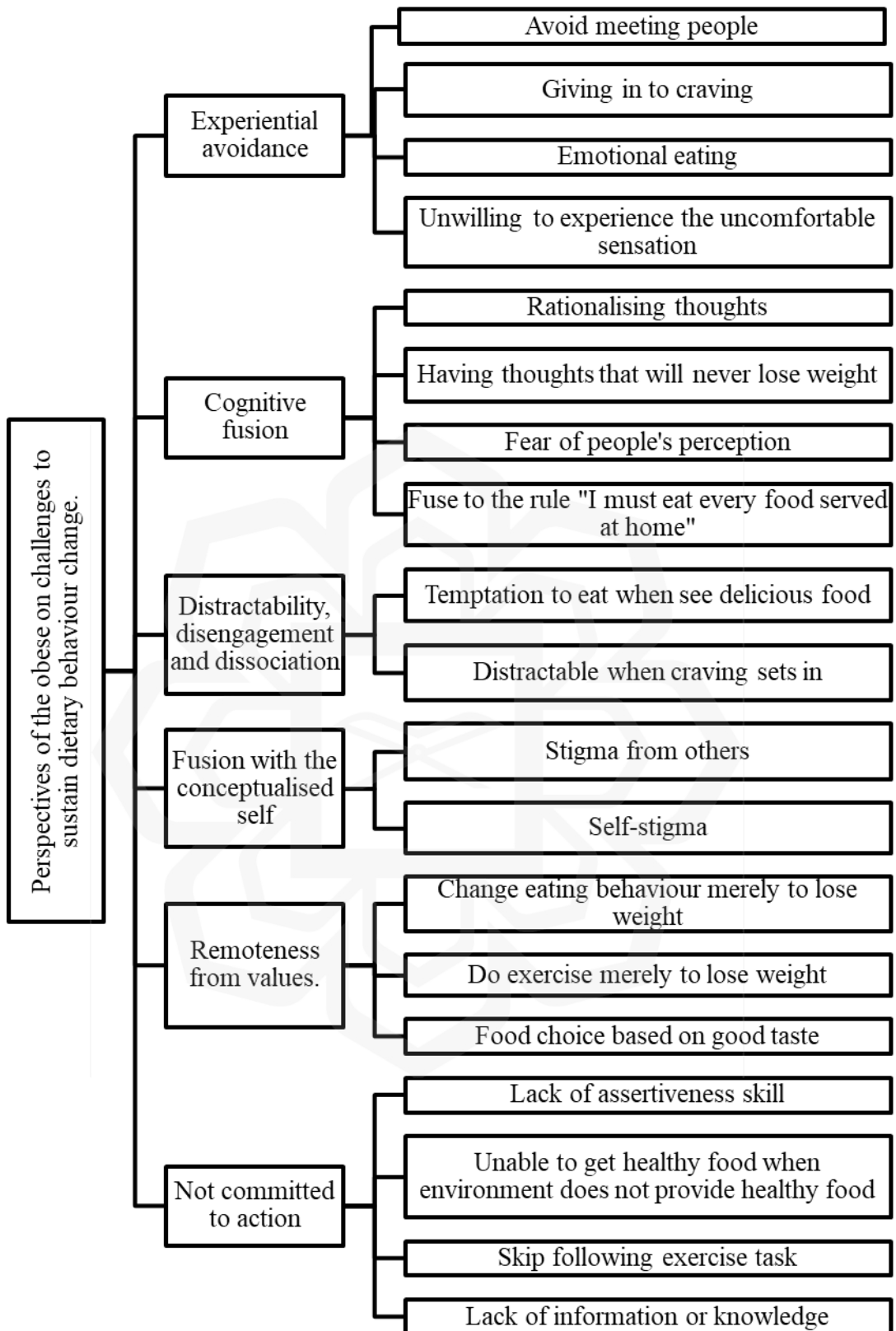


Figure 4.1 Perspectives of the obese on challenges to sustain dietary behaviour change

#### ***4.4.2.1 Psychological rigidity 1: Experiential avoidance***

The first psychological rigidity of concern is experiential avoidance. Human have private experiences that nobody else know about it such as memories, feelings, thoughts, images, emotions, urges, impulses and desires. These experiences can affect individuals by making them trying to avoid or get rid of the unwanted ones. This is termed as experiential avoidance. This theme is seen among the obese informants which hinder them from doing what matters in sustaining dietary behaviour change.

RN longed for people's acceptance and feel unease if people see her in big size. She had already avoid doing outdoor exercise in fear of people's perception.

“One of the challenges is if we have big size body, and we want to jog, for example jogging outside. I am not confident with people as people will look. I am afraid they will say “Ei, look! There's a ball rolling at the centre of track”. That is so challenging if I want to get slimmer. That is why I prefer indoor exercise as compared to outdoor exercise. I don't want to meet people as such.” (RN, DU 92)

FA and AS refuse people's invitation to events or situation that might expose their body size to public. Refusing invitation seemed a quick solution for their fear of rejection but they missed many opportunities due to this behaviour.

“For example, they invite me for swimming at the river last week but I don't want to go.” (AS, DU 70)

“For example, if we go for holiday and travel, I usually don't feel like going.” (FA, DU 42)

Craving is an urge that most of the time force an individual to fulfill. People usually crave for something sweet and fatty and people would not crave for healthy food such as vegetables. This sense of craving can sometimes be so unbearable. The informants among obese had expose that they were unwilling to experience the uncomfortable senses of craving.

“But equally important factor is my... I fall into my craving. It is so hard to control craving especially for sweet food like cakes, sweet beverages like coffee.” (AD, DU 54)

“Yes, right- craving. I am the kind of person if I crave, I must get it. Usually, I crave for sweet food like cake, cream puff, ice cream. I crave for sweet food like those.” (FA, DU 56)

“So, my obsession is to get those viral food. When I see my friend’s status on the social media, they share the food they ate, I will crave the same thing and I want to eat it also.” (SA, DU 50)

The informants were unwilling to experience emotional turbulence such as sad and stress. They seek comfort by removing the emotions through eating.

“Especially during exam or if something happens. I want to take my mind out of it. So I eat cake.” (AD, DU 68)

“In terms of feelings, sometimes I feel stress or when it is getting near the exam, the feeling of eating more food is higher. I eat what I think I wants to eat. If I am stress, I will only think about eating. If I am bored, I will also think of eating.” (SA, DU 50)

Lifestyle changes force an individual to not be in the comfort zone. Life schedule needs to be changed. Doing something that is not in the routine can be so hard for certain people. For RN and SA, exercise is an activity that they want to do but feel so reluctant to accomplish.

“However, when it comes to exercise, controlling food and everything, alaaa I am tired. Suddenly the spirit crash down. I don’t want to do it. So, this kind of situation repeats. When I see others doing those, I felt motivated. But after one or two weeks, I feel so tired doing this. Then I start to accept its fine to be fat.”(RN, DU 2)

“When I use calorie counting to lose weight, I tend to feel comfortable. If I eat more, it can be burned. But, to burn the fat, I can use many methods right? I will choose the most easiest way. However, even though it is the most easiest, I still feel reluctant and lazy to do it.” (SA, DU 70)

#### **4.4.2.2 Psychological rigidity 2: Cognitive fusion**

The second theme for psychological rigidity is cognitive fusion. Having thoughts are human's behaviour and the mind could just continuously generate new thoughts each time. When a person got tangle up with their own thoughts which further influence their actions away from their values, we call the condition as "cognitive fusion"

People tend to give reasons for their behaviour. This is partly due to wanting to avoid the feeling of guilty when intend to act something away from values. The obese informants mentioned that they fail to commit healthy eating behaviour when the mind start giving reasons that what they did is right.

I have this thought "Ha , I can taste this a little bit." But after that, I thought "Lets just finish drinking it all". (RN, DU 42)

When I was on the track to get slimmer, there is one point where I thought of giving up. I thought "I've had enough. Anyway, my body is not so fat. There are other people fatter than me." (RN, DU 108)

Usually when I buy the food, I try to put smaller portion first. but then I think "ok, today I skip dinner. so maybe I can add more" There were times when I did well. I took the vegetables. If I do it quickly, I will succeed (choosing healthy food). But if I contemplate long, I failed (AD, DU 86)

In terms of thoughts, many people said to me "Don't lose weight. Because if you're slimmer, you don't look cute. You looks like old woman." So I am already feel comfortable with this. (FA, DU 56)

Now, I still feel comfortable with my current body weight. Even thought I know that I am overweight. I am still comfortable that "Ok, don't worry, I am not in obese stage yet." Even though my weight is so near to obese range. I am in a state of comfortable but at the same time a little bit worried. (SA, DU 26)

Frequent failures after weight loss attempt leave the obese with negative thoughts about themselves. Some of the informants started to believe that they will never lose weight as evidenced by previous effort that seemed useless.

I start dieting 3-4 years. But my weight keep increasing. And also I have period. I have suspicion that I have something like PCOS. Negative thoughts like “I will never lose weight because it is harder for people with problematic period or PCOS (AD, DU 62)

After trying to lose weight, I don’t see any changes. I felt “Ohh, you will never be slim.” (AS, DU 98)

I have the feelings that “I will never get slimmer.” as I have tried a few methods but the weight number never get down. (SA, DU 40)

Doing mind reading had hinder RN from pursuing what really matter to her in terms of healthy eating behaviour. She has this fear of people’s perception and do not like to be judged.

(My challenges are) the people around me. Now, I work in the office. I fear that (people judge me). I will control my eating but not every day. For me, the definition of controlled eating is really “controlling”. If I diet, I will only eat specific food, I would not eat other food. So this really fear me. I am afraid if suddenly (people judge me) “You say you wants to diet, but you still eat a lot.” (RN, DU 58)

One of the informants believe that she needs to uphold the value of appreciating her mother’s cooking. She is fuse to the rule “I must eat every food served at home.” Hence, she must eat every food served at home regardless of their quality and quantity.

Now, my family is near me so if I suddenly say “I don’t what to eat that, I don’t want to eat this...” I am afraid (of hurting them). I have been studying far from them as I am from Sabah. I only return home during Raya. The time spent with them is so little. Thus, as for now, I don’t intend to diet. It is so challenging. I fear that they cook different food and I cook different food. I cook healthy food but they cook delicious food. So that is my challenges. (RN, DU 90)

#### **4.4.2.3 Psychological rigidity 3: Distractability, disconnection, disengagement or dissociation**

The next psychological rigidity that hinders the obese from sustaining their healthy eating behaviour are related to distractability, disconnection, disengagement or dissociation. People tend to disconnect with present moment as their mind bring them into the past or future. This may hinder one from practising healthy habit because one cannot change the past or predict the future. Inability to be at present moment also make an individual act rapidly based on their emotion rather than valued choices. Any temptations or cravings seems to only meant for fulfilment.

Temptations that are triggered via sight, smell or thoughts may influence the obese individuals to quickly choose eating that food rather than wait few moments before the senses subsides. Few of the informants reported that they fail to control themselves when they see their favourite food.

(the challenge is..) I saw delicious food. (AS, DU 88)

I've said just now that I want to reduce my portion size right? I have tried so many times. I have tried '*suku-suku separuh*'. I have reduced my portion size, I cut down my rice, I add more vegetables. But, when it comes to my favourite food, I cannot. I have to add more rice when there's my favourite dishes. (FA, DU 32)

In terms of sensation, I am really into social media. If I saw someone that I know bought viral food, by hook or by crook, I will try to find and I want to try eating that food. (SA, DU 50)

The sense of craving is one of the challenges among the obese informants. They become distracted from their purpose of losing weight and tend to choose to fulfill the cravings whenever it sets in.

(in terms of willingness scale 1-5 to experience uncomfortable thoughts, emotion & sensations that get in the way) I think me myself is 2-3 kut. Maybe (it is because) I cannot (control) if it (the craving) suddenly comes to my mind, I will "Owh, I want to taste it a bit now." (RN, DU 118)

So, my obsession is to hunt that viral food. If I saw status in social media, my friend share what had they eaten, I will also crave the same and I want to eat the same food too. (SA, DU 50)

#### ***4.4.2.4 Psychological rigidity 4: Fusion with conceptualised self***

The fourth theme related to psychological rigidity among the obese informants are being fused with the conceptualised self. People tend to dislike own self due to body weight. When people believe that body weight are only contributed by lifestyle i.e what an individual eats and how frequent he or she exercise, people have tendency to judge. This sometimes end up with action of ridicule and discrimination.

Out of five informants, only one experienced stigma from others. People always see stigma as a method of motivating others to lose weight but in fact, it actually does the opposite.

There are times when we were eating, even though I did not eat much, they tell me “Stop eating. Do not eat so much.” (AS, DU 78)

All of the informants experienced self-stigma where they see themselves as fat and dislike their own body.

(I avoid going out with friends) because I fear my body looks so fat. Previously, I have thought that nobody like fat people, we are not pretty. Other girls, most of them are slim. Then I started to believe “I am so ugly.” (AS, DU 72 & 82)

I think, weight is important. Because, if we were to take picture, it is so hard to pose so I would look slim. So, I should become slim myself then I don't need to pose hard to look slim. This (becomes an issue) when I was staying in IIUM. But now, when I am at home, nobody see me getting fatter. So at the moment, weight is not so important during MCO (movement control order). But, when I need to return IIUM, that time I will diet as much as I can. (FA, DU 36)

I think (weight is important because) its my confident. Because currently I am not confident with my weight. I am not confident with myself. If I need to face people, “Alaah, I am afraid.” I was not this kind of person last time. But now, I have this fear that people will judge me “You are fat now.” (RN, DU 62)

I think, I also like something, confident. Because people point out you know. “When did you gain a lot of weight?” so yes, it is about confident. (AD, DU 44)

#### ***4.4.2.5 Psychological rigidity 5: Remoteness from values***

The next theme with regards to psychological rigidity among the obese informants are remoteness from values. It could also be that the values are absent or weak. Values are things that matter in our life. An individual may be willing to sacrifice something if he or she see values in doing such. Hence, when difficult task such as changing eating behaviour is not driven by values, it most likely unable to sustain long.

The obese informants mentioned that to lose weight is the reason for them changing their eating behaviour. Losing weight is an outcome or the end result to be expected. It is not a value. Thus, when the behaviour is driven by result, it can be frustrating if the outcome is not met.

And then I cut out junk food. For two months, only 1 time I eat McD. I think there is no impact (to my weight). (AS, DU 16)

I have also tried that method (intermittent fasting). But I cannot because of gastric. After 3 days, I will have gastric. Bad one. The effort of losing weight is not working at all. I am stuck. I do not know what to do. If I eat low portion size, there is still no impact (to my weight). (AS, DU 22)

SA reported that she only wants to change her eating behaviour when she senses her weight is problematic. Before it reaches that point, she does not feel the need to improve.

To me, weight is just a number. I have this mindset that I will only be worried when my weight reach this certain point. But, before it reach that level, I can still feel comfortable. (SA, DU 32)

Changing to a new habit is not an easy task. It is even harder when it is not driven by values. Among the obese informants, both RN and AS experienced a lot of hurdles while doing exercise. Many sabotaging thoughts come across their mind but they keep forcing themselves as they want to lose weight. Values such as exercising for body health or clearer mind are absent. They do exercise merely to lose weight.

In the apps that I joined, they give me daily workout exercise to lose weight. There are 12 types. So, everyday, I tried doing the same thing. Those recommendation are weary to me. I felt bored and tired with it. Even though I know its benefit include burning my calories, but I am tired with all those. (RN, DU 32)

I become “So lazy to jog. Nothing happens (no weight loss)”. That’s it. But because I always counter back (my thoughts), It becomes challenging. Normally when that thoughts come to my mind, I will get up. I wear shoes and quickly go out. In the middle of exercising, (I start questioning myself) “Why do I jog?” I really have to force myself. (AS, DU 102)

What food to eat is a daily choice that an individual need to make. Food choice that is based on health concern would help an individual adopt healthy eating habit. However, among the obese informants, they mentioned their food choice are more based on preference such as good taste. It is not based on self-care value.

I sometimes buy the groceries for home. So sometimes, I buy based on my preference. My friend for example, we bought jam for bread. She choose healthier jam that is without sugar. But me, I choose the one “Ok, this is delicious, I like to eat this.” So I choose to buy the ones that I like. Not based on health concern. (RN, DU 102)

Usually, (I choose food based on) the price and type of dishes. For example at the restaurant or in IIUM, I only eat egg and chicken only. I don’t buy vegetables. This is because at home, my mother cook vegetables and I could not find outside vegetables that have the same taste as the one at home. When I look at the vegetable (at the restaurant or IIUM café), I could sense that it is different. So I am reluctant to try. I don’t eat vegetables (when I am outside home). (FA, DU 52)

#### ***4.4.2.6 Psychological rigidity 6: Not committed to action***

The last theme with regards to psychological rigidity among the obese informants that hinder them from sustaining healthy dietary behaviour change is not committed to action. Having a goal such as losing weight can only come to reality when there are actions being made. These committed actions include goal setting, skill training, assertiveness skill and so on. When actions are taken, there will be many things show up such as sabotaging thoughts and uncomfortable feelings. An individual with commitment will continue act while those who are lacking this commitment strength

might simply disregard the effort. Among the obese informants, few sub-themes emerged related to behaviour not committed to action namely lack of assertiveness skill, inavailability of healthy food, skip following exercise task and lack of information or knowledge,

Some of the obese informants reported having lack of assertiveness skill. Saying “no” politely is important skill for those who want to change their eating behaviour. Being human, we cannot always run away or avoid from socializing. Hence, communication skill is important, so one is able to refuse without hurting the other party. Among the obese informants, they reported that they have difficulty dealing with “food pusher” as their family and friends like to offer them food.

Now, I am working at the office. My friends always sponsor (food). They sponsor lunch, breakfast. I would not dare to say “No”. I am unable to say “I don’t want to eat.” So maybe, I will start my diet when I return to IIUM. This is because if I am at home, I am afraid my family would disheartened if I don’t eat what they have cooked. (RN, DU 50)

It is a little bit of peer pressure. It is from friends and family. If I am at home, (my) family usually ask me to eat a lot especially my mom. She never like (it) if I say “no” to food. She may say “just eat.” (AD, DU 58)

Some of the obese informants believe they were unable to get healthy food when environment does not provide healthy food. Their behaviour is governed and affected by the environment. Environment is one of the factor influencing an individual’s food choice. AD and SA mentioned that their failure of eating well is due to non-supportive environment.

I think right now (as) I am living at college, (food) like carbohydrate, bread, sweetened beverages are the easiest meal to go. For breakfast and dinner. Because there is not lot of option. Because I take coffee to stay up. (AD, DU 38)

One more thing is related to (food) choices. Currently in my environment, (they are) not providing choices that enable me to choose healthier meals. For example, when I go down to buy soup, but there are no soup, no tom yam. Available food are those with santan and fatty. So, that kind of environment leave me with no option. (SA, DU 48)

The informants among the obese had also been skipping from following exercise task. Exercise require energy and time commitment that many people reluctant to put. RN and SA responded that there are times when they are just feeling lazy or reluctant to exercise even though they know they have to do it.

I did mention earlier that I utilize this one apps. In it, there are tasks. Every week, I have to lose at least 1 kg. But, there are exercise that I have to do. And that particular exercise I have always skipped. It is so challenging for me. In it, there is also workout for those who work at the office. So, working in the office, I sit most of the time. I don't move much. So, the apps teach us the kind of exercise that I can do if I am at the office. Then, there is also exercise before sleeping. However, I have always skipped doing them. In the end, the goal of losing 1kg body weight is not achieved. (RN, DU 122)

When I use calorie counting to lose weight, I tend to feel complacent. If I eat in excess, it can be burned. The methods to burn the fat are also variety, right? I will choose the easiest method. Somehow, even the easiest method, I feel reluctant and lazy to do also. (SA, DU 70)

Self-efficacy is important so a particular action would be made. Specifically for healthy eating behaviour, knowledge about food choice and food preparation is important. FA mentioned that having lack of knowledge hinder her from adopting healthy eating behaviour.

In terms of healthy eating, I wants to eat healthy but I do not know the recipes and how (to eat healthily). So, I need a kind of module that let me know what I can eat in the morning, what I can eat for lunch. If this (kind of module) is made available, InsyaAllah I can follow. However, currently there is none. That's my challenges. (FA, DU 50)

#### ***4.4.2.7 Performance Gap and the Need for Instructional Material Development***

All in all, interview from the obese participants proved that the factors making them unable to sustain dietary behaviour change is psychological rigidity namely experiential avoidance, cognitive fusion, distractibility, disengagement, dissociation, fusion with the conceptualized self, remoteness from values and not committed to action.

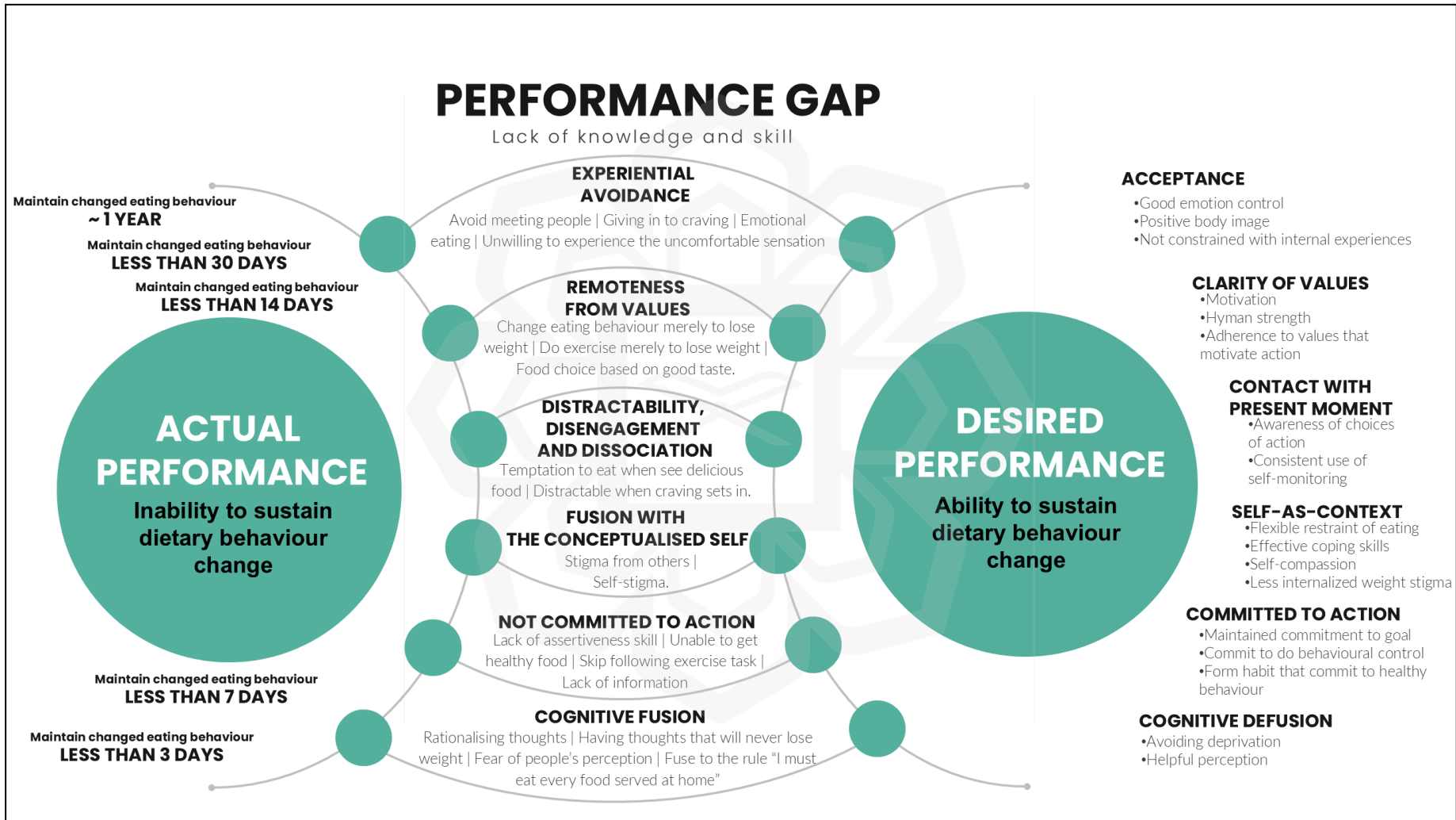


Figure 4.2 The Performance Gap

## **4.5 PURPOSE STATEMENT OF THE MODULE TO NARROW THE PERFORMANCE GAP**

### **4.5.1 Purpose statement of instructional design**

Based on earlier data collection (systematic literature review and interview), there are six main causes of failure to sustain healthy dietary behaviour change among the obese women from the perspective of Acceptance and Commitment Therapy. They are presented in Table 4.3.



Table 4.3 Performance assessment chart

No.	<b>Actual performance:</b> Fail to sustain healthy dietary behaviour change due to <b>performance gap</b>	<b>Desired performance:</b> Able to sustain healthy dietary behaviour change	<b>Primary cause:</b> Lack of psychological flexibility skill.	<b>Purpose statement</b>
1	Avoid experiencing unwanted or uncomfortable emotion, sensations and other internal private experiences by committing to dietary behaviour that are away from values.	Willing to experience uncomfortable emotion, sensations and other internal private experiences by not responding through eating behaviour which are away from values.	Lack of skill to willingly accept or experience internal private experiences.	The purpose of this self-help book module is to train the readers among overweight and obese women, with psychological flexibility skills so they will be able to sustain healthy dietary behaviour change.
2	Cognitively fused with thoughts “I will never lose weight” and “I must eat ever food served at home.	Able to cognitively defuse from unworkable thoughts.	Lack of cognitive defusion skill.	
3	Tempted to eat when see delicious food and became distracted when craving sets in.	Able to contact with present moment hence able to choose food intake based on values and not emotions and sensations.	Lack of being contact with present moment skill.	
4	Fusion with the conceptualised self that became affected with stigma.	Able be the self as observer and not hooked with one particular negative experience.	Lack of skill in being the observer to self that seeing self as the context.	
5	Remoteness from values when pursuing tasks related to losing weight.	Clear of values such as health and self-care when pursuing tasks related to changing dietary behaviour.	Lack of skill in getting clear of one’s values.	
6	Not committed to take action in maintaining healthy lifestyle.	Committed to action	Lack of skill to give commitment in tasks that seemed not pleasurable.	

In summary, the obese women are having lack of psychological flexibility skills that comprised of (1) acceptance, (2) cognitive defusion, (3) contact with present moment, (4) self-as-context, (5) clarity of values and (6) committed to actions. This lack of skills is the main causes of inability to sustain healthy dietary behaviour change. According to Branch (2009), the ADDIE process may continue if the performance gap is lack of knowledge and skill. Thus, the performance gap assessment conducted during this analysis phase hold strong evidence that there is a need to proceed with the study.

The purpose statement of this thesis is to develop an instructional resource in the form of bibliotherapy module (a self-help book) that train the readers among overweight and obese women, with psychological flexibility skills so they will be able to sustain healthy dietary behaviour change.

#### **4.5.2 Narrowing the performance gap**

To narrow the performance gap, the ADDIE instructional design model suggest few steps including (1) determine instructional goals, (2) confirm the intended audience, (3) identify required resources and (4) determine potential delivery system (Branch, 2009). With reference to the purpose statement, this thesis aims to produce a bibliotherapy module in a form of a self-help book as an instructional intervention for the overweight and obese women. This self-help book will be based on Acceptance and Commitment Therapy theory. The instructional goals of the self-help book to be developed is presented in table 4.4.

Table 4.4 Instructional goals for instruction product (self-help book)

No.	Psychological flexibility domain	Instructional goals (At the end of the self-help book program, the participants would be able to ...)
1	Acceptance	Demonstrate the skill of willingness to experience unwanted or uncomfortable emotion, sensations and other internal private experiences.
2	Cognitive defusion	Practise making a distance between the self and unworkable thoughts so that will not be hooked with ideas that might influence unhealthy eating behaviour.
3	Contact with present moment	Demonstrate mindfulness skill or being more in contact with present moment with less occurrence in mindless food decision making or food choice that are away from values.
4	Self-as-context	Observe the private internal experiences as a part of a bigger self which enable see the self as the context.
5	Clarity of values	Select values to hold whenever there comes the time to decide on food choice or dietary behaviour.
6	Commitment to action	Plan healthy eating strategies and actualize them.

#### 4.6 CONDUCT DOCUMENT REVIEW FOR TENTATIVE DESIGNS GUIDELINES

The main content of the developed self-help book is educating the readers about psychological flexibility. These sections will answer the fourth research questions of analysis phase, research question 1.4, which is “What are the specific strategies of Acceptance and Commitment Therapy (ACT) that used by practitioners in the literature to promote sustained dietary behaviour change?”

There are six components of psychological flexibility in Acceptance and Commitment Therapy (ACT) to sustain behavioural change. The components are 1) Values; 2) Acceptance; 3) Cognitive defusion; 4) Contact with present moment; 5) Self-as-context and 6) Commitment.

#### **4.6.1 Elements of module to develop psychological flexibility based on literature review**

ACT success enhances psychological flexibility, or the capacity to act in accordance with one's ideals in the face of challenging cognitive and emotional obstacles (Lillis et al., 2016). This explains why, when compared to those in the condition receiving standard behavioural therapy, acceptance-based behavioural therapy participants regained significantly less weight throughout the post-treatment phase (Lillis et al., 2016).

From baseline to follow-up, patients who got the ACT intervention were more likely to lose 5% of their body weight and keep it off after being discharged (Cattivelli et al., 2021). Therefore, the ACT intervention was successful in keeping weight loss sustained over time. A web-based, ACT-based, guided self-help intervention on preventing weight gain for overweight or obese adults improved psychological factors (uncontrolled eating, cognitive restraint, and experiential avoidance) known to contribute to successful weight management in the long run (Mueller et al., 2022). Uncontrolled eating and cognitive restriction were both improved by the SWiM-C intervention (Mueller et al., 2022).

In the current obesogenic environment, where food is abundant and easily accessible and sedentary lifestyles are common, it appears that all the skills like acceptance, cognitive defusion, distress tolerance, values, committed actions, mindfulness, and self-compassion may be crucial to maintaining healthy behaviours (L. Palmeira et al., 2017). All these skills improve an individual's psychological flexibility. The following subtopics will extract information from the literature specifically on the techniques used to train participants with skills to improve psychological flexibility.

## Acceptance

To design acceptance based behavioural intervention, Lillis and colleagues (2015) illustrated, through experiential exercises, how futile attempts to control or avoid internal experiences are really linked to unhelpful weight loss behaviours. Then, acceptance solutions are introduced. For instance, emotional eating is described as a short-term strategy for coping with stress that, in the medium to long term, results in increased stress and sadness, deteriorated health, and possibly weight gain (Lillis et al., 2015). Through a variety of exercises, participants are made to experience undesirable physiological and emotional states (through guided imagery and the presentation of desired foods), after which distress tolerance skills, such as urge surfing, are taught in the presence of undesirable emotions or cravings (Lillis et al., 2015). Participants are trained to accept cravings, hunger and reduction in pleasure associated with low-calorie diet (Forman & Butryn, 2015)

Boucher and colleagues (2016) utilized experiential audio activities to deliver ACT's core skills such as "surfing" urges to eat when not physically hungry. Participants were trained to cope with emotions without using food. In order to encourage participants do reflection, the module provide typed activities. The reflection questions for the typed activities include the following :

1. Reflect on common triggers to eat when not physically hungry
2. How life would be different if response to cravings was asking "Am I physically hungry?" and "Is this food really what I feel like in this moment?"
3. Reflect on common triggers to eat emotionally
4. How life would be different if allowing uncomfortable feelings to be present and not eating to change feelings. Ask "Is emotional eating in line with what matters wmost in life?"

Food cravings are dealt with urge surfing that is taught using the metaphor of surfing waves in the ocean (Lillis et al., 2021). On the other hand, uncomfortable emotions such as boredom and anxiety which might lead to emotional eating are dealt

with making room for them. The participants were encouraged to become aware of, accept, and give space for their emotional states before acting in a way that was consistent with their goals or values (Lillis et al., 2021). Bricker teach the participants who have an urge to pause and notice their breath and body (Bricker et al., 2021). The aim is to let the urge be as it is without acting on it.

### **Cognitive defusion**

The capacity to distance oneself from one's thoughts and feelings and recognise them as "merely" passing psychological events that don't require belief, action, control, or suppression is known as cognitive defusion (Forman et al., 2013). To learn cognitive defusion skill, participants are trained to step back from negative thoughts without attempting to alter or eliminate them. The main objective of cognitive defusion is to separate problematic thoughts from unhealthy behaviour. To meet this aim, meditation, thought labelling (e.g self-sabotaging or judgment), guided imagery (e.g leaves on a stream), thought exposure (repeating a problematic thought over and over) and metaphor (e.g mind as a "bad motivational speaker") are a few of various techniques that participants learn (Lillis et al., 2015b). In order to distance themselves from their own thoughts, participants are asked to visualize placing their thoughts on leaves floating in a stream (Boucher et al., 2016).

Cognitive defusion is one of mindfulness strategies that teaches participant relate stigmatizing thoughts as just thoughts (Levin et al., 2018). Participants are taught to identify frequent negative thoughts, accept those thoughts without acting on them, and carry out goal-directed action despite those thoughts (Lillis et al., 2021). This objective is met by inviting the participants to reflect how long those ideas have bothered them despite their best efforts to get rid of them. Participants will learn how to become more observant of and detached from thoughts that frequently lead to unhealthy behaviours through guided imagery (Lillis et al., 2021). They will carry out experiential exercises, such as describing permissive and critical avatars for their thoughts, while imagining and "hearing" such thoughts come from these mind avatars to create a sense of distance. They are also taught to imagine passively watching their thoughts as large cue cards walking across a stage.

Some of the metaphor that can be used to illustrate cognitive defusion idea is “The passenger on a bus” metaphor. In this metaphor, the participants are instructed to visualise themselves as the bus driver, with each thoughts representing a passenger getting on and off the bus. Participants as the bus driver can accept, defuse, and lessen the strength of their thoughts with the aid of this exercise (Usubini et al., 2021).

### **Contact with present moment**

Increased awareness of internal, rather than outward, urges to eat is thought to be how mindfulness functions. It is possible to address poor eating habits and the difficulties many people have with food portion size by practising mindfulness and mindful eating (Warren et al., 2017) . It would appear that promoting a mindful eating approach would be a good message to add in general weight management advice given to the public (Warren et al., 2017) . The intervention aid people in being more conscious of their perceptual, cognitive, and emotional experiences (Forman et al., 2013) . Participants were taught to become more present and aware via metaphors and experiential activities, which decreased the possibility that they would act in a "mindless" way. The main goal of the intervention was to support participants in developing more "mindful" and intentional behavioural (i.e., food and exercise) choices. Participants gained awareness of the actions, ideas, and emotions that previously led to weight increase.

To improve participants’ awareness skill, few modules are taught such as scanning mouth, throat and stomach to recognize physical signals of hunger and awareness of stomach sensations to recognize physical signals of fullness (Boucher et al., 2016). Both of these are trained via guided audio activity.

Mindful eating is also a commonly used module practiced by many to train contact with present moment skills (Lappalainen et al., 2014 ; Forman & Butryn, 2015; Boucher et al., 2016) . Other modules, such breathing exercises and body scans, are beneficial for helping participants realise their behaviour and context which then take committed actions that are aligned with their values (Usubini et al., 2021).

## **Self-as-context**

Self-as-context or the skill of being “the observer self” is introduced to participants through mindful self-compassion (Levin et al., 2018). This concept is introduced to the participants via “The enduring you” introduction (Levin et al., 2018) or “Identifying the transcendent self” (Afari et al., 2019).

Palmeira and colleagues (2017) introduce the role of shame and self-criticism through two-teachers metaphor. Self-compassion was later suggested as the antidote. Experiential exercises for these include loving-kindness meditation, compassionate friend exercise and compassionate letter writing exercise (L. Palmeira et al., 2017).

The authors of the self-help book "The Diet Trap" encourage readers to explore the negative effects of self-stigma, practise self-compassion by being grateful for their bodies, take valued actions, and engage in mindful meditation techniques like mindfulness of the breath and body scan (Levin et al., 2018). These techniques can help readers connect with their self-as-context.

McCallum et al. (2021) created a mobile health behaviour change program that offers articles on the self-compassion tenets and explains the significance of being kind to oneself despite flaws or shortcomings. The participants are also taught not to judge themselves.

## **Clarity of values**

Helping the client to choose values-based action is main aim in ACT. Thus, training the client to have clarification of values are crucial. By defining personally important values and establishing significant patterns of behaviour through committed acts, ACT aims to assist clients in identifying alternative behavioural compass points (Levin et al., 2018) . Through these procedures, clients engage in more valued behaviours (increasing quality of life) that they had previously refrained from doing because of weight-related stigma and more successfully engage in healthy behaviours because of their connection to values (Levin et al., 2018).

There are many benefits when clients aware their own set of values . For example, behaviours that affect weight are seen as supporting a bigger picture of desired life actions, such as being active, nourishing the body well, setting a good example for family members, and extending longevity to spend more time with loved ones (Lillis et. al., 2015). It is repeatedly emphasized that behaviours affecting weight are connected to core values, which is thought to maintain motivation over time (Lillis et. al, 2015).

In a web-based intervention, Boucher and colleagues (2016) optimize reflection via typed activities to help participants clarify their values. For the purpose of assisting participants in identifying how weight-related behaviours are essential to promoting desired life actions, Lillis and colleagues (Lillis et al., 2017) employed basic values clarification and commitment techniques, such as writing about core values related to health, relationships, and work and setting values-based goals (e.g. being active, nourishing your body, setting a good example for family members, and increasing longevity, being more present during time with loved ones).

The self-help book “The Diet Trap” makes extensive use of journaling, self-guided imagery exercises, educational components, and metaphors to establish and support an alternative health behaviour change agenda that is broadly focused on making healthy decisions consistent with personal values (Levin et al., 2018) . At the same time, it undermine a narrow focus on weight loss and weight change as a way to sway unwanted cognitive and emotional experiences (Levin et al., 2018).

Lillis and colleagues (2019) designed a values-based and acceptance-based intervention to promote physical activity. The goal of the workshop is to create autonomous, values-based motivation to increase number of physical exercise. In order to clarify the relative relevance of the primary values domains (such as social, vocational, and recreational), participants engage in basic and advanced values clarification exercises (Lillis & Bond, 2019). These modules enable participants to realize the possible impact of physical activity on functioning in social, vocational and recreational domain. By choosing activities that will have a significant impact on personally determined valued domains, participants create their own values-based goals (Lillis & Bond, 2019).

## **Commitment**

The ACT workshop intervention include goal setting module to promote adoption and maintenance of habitual physical activity among inactive adults (Lillis & Bond, 2019). In order to do this, participants were invited to consider recent advice from the American College of Sports Medicine, select a personal objective, and set broad weekly physical activity objectives for themselves. (Lillis & Bond, 2019). Palmeira and colleagues (2017) also utilize goals, barriers and actions worksheet to enhance motivation towards healthy valued actions. The participants are invited to create obtainable goals towards a healthier life (L. Palmeira et al., 2017).

Monitoring is an important factor in most weight management. Dealing with obstacles are also frequently discussed topic in weight management programme. Some intervention address this by doing a plan for those obstacles. Kasila and colleagues (2020) gave weekly tasks to participants which target each domain of psychological flexibility hexaflex. To enhance committed action, the participants were asked “What steps could you take today to increase your well-being” and “Observe what kinds of barriers occur when you’re trying to make changes.” (Kasila et al., 2020)

Information on weight management and healthy diet were given to assist value-based actions (Suojanen et al., 2020). The participants were educated with plate model, portion size, managing eating frequencies, vegetables and fruits, fibre, protein, drinks and sweets (Suojanen et al., 2020).

Table 4.5 Summary of ACT components prescribed in weight management modules

No.	Author of ACT module	Component of psychological flexibility hexaflex					
		Acceptance	Cognitive defusion	Contact with present moment	Self-as-context	Clarity of values	Commitment
1	Lappalainen et al., (2014)	- Making room for unpleasant feelings, sensations, urges and other private experiences, allowing them to come and go without struggling with them.	- Observing thoughts without being caught up in them	- Relaxing and listen to the body - Mindful eating.	Nil	- Clarifying specific goals and actions that support valued behaviour.	Nil
2	Lillis et al. (2015)	- Acceptance of unwanted emotions and food cravings (urge surfing)	- Detachment from problematic thoughts	- Mindful awareness	Nil	Nil	Nil
3	Forman & Butryn (2015)	- Psychoeducation on the impossibility of fully controlling internal responses	Nil	- Mindless vs mindful eating.	- Acceptance related to behavioural fatigue, negative evaluations of	- Clarification of ultimate personal values - continues awareness of	Nil

		<ul style="list-style-type: none"> <li>- Acceptance of cravings, hunger and reduction in pleasure associated with low-calorie diet.</li> <li>- Urge surfing.</li> </ul>			<p>the body and soreness and reduction in pleasure associated with physical activity.</p>	<p>values as they relate to decisions</p>	
4	Boucher et al. (2016)	<ul style="list-style-type: none"> <li>- Coping with cravings (urge surfing).</li> <li>- Coping with emotional eating (make space for emotion)</li> </ul>	<ul style="list-style-type: none"> <li>- Taming the inner critics (leaves in a stream activity).</li> </ul>	<ul style="list-style-type: none"> <li>- Recognizing physical hunger (body scanning)</li> <li>- Recognizing fullness.</li> <li>- Mindful eating</li> <li>- Mindful walking.</li> </ul>	<ul style="list-style-type: none"> <li>- Appreciating body function (body scan)</li> </ul>	<ul style="list-style-type: none"> <li>- Reflection on how practicing the skills make a difference to their life (typed activities for each section)</li> </ul>	<ul style="list-style-type: none"> <li>- Use self-monitoring tools</li> </ul>
5	Palmeira et al., (2017)	<ul style="list-style-type: none"> <li>- Man in the hole metaphor</li> <li>- Passenger on the bus metaphor</li> <li>- Urge surfing</li> </ul>	<ul style="list-style-type: none"> <li>- Why language lead to suffering (Debate language as a double-edged sword)</li> <li>- Leaves on a stream</li> </ul>	<ul style="list-style-type: none"> <li>- Eating a raisin meditation</li> <li>- Mindfulness of breathing</li> <li>- Mindful looking at your hand</li> <li>- Mindful walking exercise</li> </ul>	<ul style="list-style-type: none"> <li>- Two-teacher metaphor</li> <li>- Loving-kindness meditation</li> <li>- Compassionate friend exercise</li> <li>- Compassionate letter writing</li> </ul>	<ul style="list-style-type: none"> <li>- Attending your own funeral exercise</li> </ul>	<ul style="list-style-type: none"> <li>- Goals, barriers and action worksheet</li> <li>- Willingness and action plan worksheet</li> </ul>

6	Lillis et al. (2017)	<ul style="list-style-type: none"> <li>- Practice “riding out” internal experiences without engaging in unhealthy behaviour (guided imagery and presentation of food cues).</li> </ul>	<ul style="list-style-type: none"> <li>- Awareness of problematic thoughts (thought labeling, leaves on a stream guided imagery, metaphor – mind as bad motivational speaker).</li> </ul>	Nil	Nil	<ul style="list-style-type: none"> <li>- Writing about core values related to health, relationships and work.</li> <li>- Set values-based goals</li> </ul>	Nil
7	Levin et al. (2018)	<ul style="list-style-type: none"> <li>- Identifying patterns of experiential avoidance and their costs</li> <li>- Welcoming emotions like an old friend</li> <li>- School of fish exercise</li> <li>- Willingness pedometer</li> <li>- Acceptance of cravings</li> <li>- “Big celebration dinner” exercise</li> </ul>	<ul style="list-style-type: none"> <li>- Explore how minds work (noticing constant stream of thoughts, unworkability of thought suppression)</li> <li>- Notice unhelpful thinking patterns (self-evaluation, reason giving, “I cant” thoughts)</li> </ul>	<ul style="list-style-type: none"> <li>- Mindful meditation (mindfulness of the breath and body scan).</li> </ul>	<ul style="list-style-type: none"> <li>- Explore negative consequences of self-stigma.</li> <li>- Practising self-compassion by extending gratitude to the body</li> <li>- Identify self-compassionate reasons for health behaviours</li> </ul>	<ul style="list-style-type: none"> <li>- Identify values in key life domains</li> <li>- Tombstone exercise</li> <li>- Clarifying if/how weight loss is connected to personal values.</li> <li>- Values “Bull’s eye” exercise.</li> <li>- How to turn “I must” into</li> </ul>	<ul style="list-style-type: none"> <li>- “Writing a new life story” exercise.</li> <li>- Explore ways you might get stuck in the future and how to return to skills learned</li> <li>- How to continue working on</li> </ul>

		(how to enjoy a dinner party while being willing to have unwanted guests [emotion] present)	<ul style="list-style-type: none"> <li>- How to relate to thoughts as just thoughts.</li> <li>- How to make choices independent of thoughts, reasons &amp; rules</li> </ul>			<ul style="list-style-type: none"> <li>- “I choose”.</li> <li>- Writing a letter of gratitude to self</li> <li>- “Pressing the play button” exercise</li> <li>- “Finding meaning in pain” exercise.</li> </ul>	values.
8	Lillis et al. (2021)	<ul style="list-style-type: none"> <li>- Coping with food cravings (metaphor of surfing waves in the ocean)</li> <li>- Coping with uncomfortable emotions (make room for their feeling states)</li> </ul>	<ul style="list-style-type: none"> <li>- Guided imagery of watching thoughts as cue cards that walk on the stage</li> <li>- Guided imagery of hearing thoughts from mind avatar</li> </ul>	Nil	Nil	Nil	Nil
9	Guerrini Usubini et al. (2021)	- Passenger on the bus metaphor	- Passenger on the bus metaphor.	- Breathing exercises, body scan, mindful sitting.	Nil	Nil	Nil

10	(McCallum et al., 2021)	Nil	Nil	<ul style="list-style-type: none"> <li>- Principles of mindfulness and practical tips on how to incorporate in daily lives (e.g mindful breathing)</li> </ul>	<ul style="list-style-type: none"> <li>- Principles of self-compassion.</li> <li>- Explain the importance of showing oneself kindness and understanding even with limitations or failures</li> <li>- Refraining from self-judgment.</li> </ul>	Nil	Nil
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#### **4.6.2 Tentative design guidelines**

Based on the literature review, a tentative design guidelines is created to inform the next phase (design phase). The tentative design guidelines is shown in table 4.6.



Table 4.6 Tentative design guidelines

No.	Theories	Main design principles	Elaboration of principles
1	Acceptance and Commitment Therapy	1.1 Start with concept of valued living (Ciarrochi, Bailey, et al., 2014; Leebaggley, 2019).	1.1.1 The key to sustained behavioural change is to link the new behaviour with motivational values
		1.2 Explain “experiential avoidance” and “creative hopelessness” first before introducing the concept of “acceptance” (Merwin et al., 2023)	1.2.1 Introduce concept via identifying patterns of experiential avoidance and their costs.
		1.3 For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	1.3.1 Provide text and illustration to develop readers’ values clarification skill. <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Attending your own funeral exercise.</li> <li>• The differences between values and goals.</li> <li>• Planning the content of my deeds book.</li> </ul> </li> <li>○ Enhance values clarification skill via : <ul style="list-style-type: none"> <li>• Identify values in key life domains</li> <li>• Clarifying if/ how changing eating habit is connected to personal values.</li> <li>• “Finding meaning in pain” exercise</li> </ul> </li> </ul> 1.3.2 Provide text and illustration to develop readers’ acceptance skill <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Identify patterns of experiential avoidance and their costs.</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>• “Passengers on the bus” metaphor</li> <li>• Reflect on the skill being trained in the fasting month of Ramadhan.</li> <li>• Enhance acceptance skill via : <ul style="list-style-type: none"> <li>• Urge surfing exercise</li> <li>• “Make space for emotion” exercise</li> <li>• Willingness pedometer as monitoring tool</li> </ul> </li> </ul>
			<p>1.3.3 Provide text and illustration to develop readers’ contact-with-present-moment skill</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Intentional eating vs auto-pilot mode.</li> </ul> </li> <li>○ Enhance contact-with-present-moment skill via : <ul style="list-style-type: none"> <li>• Dropping anchor exercise</li> <li>• Mindful breathing exercise</li> <li>• Mindful eating exercise</li> <li>• Mindful drinking exercise</li> </ul> </li> </ul>
			<p>1.3.4 Provide text and illustration to develop readers’ cognitive defusion skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• “Why language lead to suffering?”</li> <li>• Notice unhelpful thinking patterns</li> <li>• The existence of whisper from syaitan</li> </ul> </li> <li>○ Enhance cognitive defusion skill via : <ul style="list-style-type: none"> <li>• Introduce the concept of taawuz “Seeking protection of Allah from waswasah.”</li> <li>• Guided imagery of hearing thoughts from mind avatar</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>• Guided imagery of watching thoughts as cue cards that walk on the stage</li> <li>• Thanking the thoughts exercise</li> <li>• Rhyme the “thoughts” into a known song (e.g happy birthday song)</li> </ul>
			<p>1.3.5 Provide text to develop readers’ self-as-context skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• The skies metaphor</li> <li>• Explore negative consequences of self-stigma.</li> <li>• Concept of self-compassion through “Two teacher metaphor”</li> </ul> </li> <li>○ Enhance self-as-context skill via : <ul style="list-style-type: none"> <li>• Compassionate friend exercise</li> <li>• Extending gratitude to the body (body scan).</li> </ul> </li> </ul>
			<p>1.3.6 Provide text to enhance the capability to commit in valued action.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• The values-commitment worksheet</li> <li>• Choice point worksheet.</li> </ul> </li> <li>○ Enhance committed to valued action skill via : <ul style="list-style-type: none"> <li>• Set values-based goals.</li> <li>• Explore barriers or obstacles and how to overcome them.</li> <li>• Discuss on self-monitoring tools.</li> </ul> </li> </ul>

2	Therapeutic reading (bibliotherapy)	2.1 Provide text that allow the process of identification, projection, catharsis and gaining insight to occur (Shrodes, 1950)	2.1.1 <ul style="list-style-type: none"> <li>• Include relevant short stories to bring about identification, projection and catharsis process.</li> <li>• Provide reflection exercises to elicit insights.</li> </ul>
3	Instruction message design	3.1 Apply communication theory in instructional design (Hartley, 2004; Richey et al., 2011a)	3.1.1 <ul style="list-style-type: none"> <li>• Design the layout using guidelines of text designs</li> <li>• Write organized messages which are in orderly state, rich in pattern and structure, highly interconnected and containing a good deal of redundancy.</li> <li>• Manage information load.</li> <li>• Use cueing techniques.</li> <li>• Use content-generated attention.</li> </ul>
		3.2 Apply learning theory in instructional design (Richey et al., 2011b)	3.2.1 <ul style="list-style-type: none"> <li>• Message design strategies</li> <li>• Chunking</li> <li>• Mnemonics</li> <li>• Advance organizers</li> </ul>

## 4.7 CHAPTER SUMMARY

This chapter present the analysis process of the ADDIE instructional design model. Table 4.7 summarises steps of the analysis process conducted. At present, the obese female young adult use strategies such as intermittent fasting, low carbohydrate diet, exercising and Atkin’s diet to lose weight. Only the behaviour of drinking adequate plain water and eating vegetables sustain long. Other behaviour change such as reducing sugar intake, daily exercising and cutting down carbohydrate intake cannot sustain longer than two weeks of behavioural change.

Findings from systematic literature review confirm the desired performance of sustained weight loss are related to psychological flexibility. The interviews with obese female young adults revealed that lack of psychological flexibility contribute to inability to sustain dietary behaviour change. The summary of the analysis of performance gap is presented in Table 4.7. This will inform the next stage of DDR which are design and developmental stage.

Table 4.7 Summary of performance gap analysis

<b>Summary of the analysis of performance gap: Ability of obese female young adults to sustain healthy dietary behaviour change.</b>		
<b>1. Identifying the performance gap</b>		
<b>Actual performance</b>	<b>Desired performance</b>	<b>Primary cause gap</b>
1.1 Sustaining healthy dietary behaviour change		
Fail to sustain healthy dietary behaviour change	Able to sustain healthy dietary behaviour change	Lack of psychological flexibility skill
1.2 Psychological flexibility		
Avoid experiencing unwanted or uncomfortable emotion , sensations and other internal private experiences by committing to dietary behaviour that are away from values.	Willing to experience uncomfortable emotion,sensations and other internal private experiences by not responding through eating behaviour which are away from values.	Lack of skill to willingly accept or experience internal private experiences.

Cognitively fused with thoughts “I will never lose weight” and “I must eat every food served at home.	Able to cognitively defuse from unworkable thoughts.	Lack of cognitive defusion skill.
Tempted to eat when see delicious food and became distracted when craving sets in.	Able to contact with present moment hence able to choose food intake based on values and not emotions and sensations.	Lack of being contact with present moment skill.
Fusion with the conceptualised self that became affected with stigma.	Able to be the self as observer and not hooked with one particular negative experience.	Lack of skill in being the observer to self that seeing self as the context.
Remoteness from values when pursuing tasks related to losing weight.	Clear of values such as health and self-care when pursuing tasks related to changing dietary behaviour.	Lack of skill in getting clear of one’s values.
Not committed to take action in maintaining healthy lifestyle.	Committed to action	Lack of skill to give commitment in tasks that seemed not pleasurable.

## 2. Purpose statement

The purpose of this self-help book module is to train the readers among overweight and obese women, with psychological flexibility skills so they will be able to sustain healthy dietary behaviour change.

## 3. Determining instructional goals

At the end of this guided self-help book program, the learners would be able to... :

1. Demonstrate the skill of willingness to experience unwanted or uncomfortable emotion, sensations and other internal private experiences.
2. Practise making a distance between the self and unworkable thoughts so that will not be hooked with ideas that might influence unhealthy eating behaviour.
3. Demonstrate mindfulness skill or being more in contact with present moment with less occurrence in mindless food decision making or food choice that are away from values.

4. Observe the private internal experiences as a part of a bigger self which enable see the self as the context.
5. Select values to hold whenever there comes the time to decide on food choice or dietary behaviour.
6. Plan healthy eating strategies and actualize them.



## **CHAPTER FIVE**

### **FINDINGS FOR DESIGN AND DEVELOPMENT PHASE (PHASE 2)**

#### **5.1 INTRODUCTION**

This chapter delves into the findings stemming from the design and development process of a self-help book prototype (a bibliotherapy module) tailored to foster sustainable changes in dietary behaviour. It presents the findings associated with the formative evaluation of design phase and development phase. Firstly, the quality criteria for design and development phase of a module is briefly explained. Then, the findings obtained from each formative evaluation are summarized. Experts review and responses towards the design decisions (design phase) and developed prototype 1 (development phase) are analysed in this chapter.

#### **5.2 FORMATIVE EVALUATION IN DESIGN AND DEVELOPMENTAL PHASE**

"Formative evaluation" involves assessing the strengths and weaknesses of instructional material during its development stage (Tessmer, 1993). The aim is to revise and enhance its effectiveness and appeal (Tessmer, 1993). This evaluation is carried out by gathering data from various sources and utilizing multiple data collection methods and tools.

In instructional design, evaluating the developed learning tools such as self-help book is required during its design and developmental phase. The goal of formative evaluation is to confirm that the instructional objectives are met and to enhance the instruction as needed by identifying and addressing any problematic areas (Weston et al., 1995). An essential initial step in formative evaluation is clarifying the goals. Formative evaluation should align with the instructional objectives in terms of its effectiveness, efficiency, and appeal (Weston et al., 1995). It should also be designed in a way which gives information whether and how well these goals are achieved. If the aim of the formative evaluation is to determine the effectiveness of

the instruction, the evaluation might include questions about whether learners are meeting the intended outcomes and if the content is accurate, comprehensive, and current (Weston et al., 1995).

### 5.3 DESIGN PHASE

#### 5.3.1 Initial design principles based on analysis phase

Based on the analysis phase, the initial design principles are shown in table 5.1.

Table 5.1 Initial design principles

No.	Theories	Main design principles
1	Acceptance and Commitment Therapy	1.1 Start with concept of valued living (Ciarrochi, Bailey, et al., 2014; Lee-baggley, 2019).
		1.2 Explain “experiential avoidance” and “creative hopelessness” first before introducing the concept of “acceptance” (Merwin et al., 2023)
		1.3 For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>
2	Therapeutic reading (bibliotherapy)	2.1 Provide text that allow the process of identification, projection, catharsis and gaining insights to occur (Shrodes, 1950)
3	Instruction message design	3.1 Apply communication theory in instructional design (Hartley, 2004; Richey et al., 2011a)
		3.2 Apply learning theory in instructional design (Richey et al., 2011b)

The evaluation of this design phase focus specifically on theory Acceptance and Commitment Therapy (ACT). The following are elaboration of design principles which further evaluated by experts for content validation.

Table 5.2 Proposed solution and initial design principles of bibliotherapy module based on needs analysis

No.	Critical area to be addressed based on the findings of the needs analysis	Proposed solution	Initial design principles	Elaboration of design principles
1	Obese women are remote from values when pursuing tasks related to healthy eating behaviour.	<ul style="list-style-type: none"> <li>• Help participants clarify their values</li> <li>• Train participants with skill to live a valued-living.</li> </ul>	For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	Provide text and illustration to educate readers' on values clarification skill. <ul style="list-style-type: none"> <li>○ Introduce concept via :               <ul style="list-style-type: none"> <li>• Attending your own funeral exercise.</li> <li>• The differences between values and goals.</li> <li>• Planning the content of my deeds book.</li> </ul> </li> <li>○ Enhance values clarification skill via :               <ul style="list-style-type: none"> <li>• Identify values in key life domains</li> <li>• Clarifying if/ how changing eating habit is connected to personal values.</li> <li>• “Finding meaning in pain” exercise</li> </ul> </li> </ul>
2	Obese women avoid experiencing unwanted or uncomfortable emotion , sensations and other internal private experiences by committing to dietary behaviour that are away from values.	<ul style="list-style-type: none"> <li>• Increase awareness about the consequences of experiential avoidance.</li> <li>• Introduce the concept of creative hopelessness.</li> <li>• Educate on “acceptance” skill</li> </ul>	For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	Provide text and illustration to educate readers' about “acceptance” skill. <ul style="list-style-type: none"> <li>○ Introduce concept via :               <ul style="list-style-type: none"> <li>• Identify patterns of experiential avoidance and their costs.</li> <li>• “Passengers on the bus” metaphor</li> <li>• Reflect on the skill being trained in the fasting month of Ramadhan.</li> </ul> </li> <li>• Enhance acceptance skill via :               <ul style="list-style-type: none"> <li>• Urge surfing exercise</li> </ul> </li> </ul>

				<ul style="list-style-type: none"> <li>• “Make space for emotion” exercise</li> <li>• Willingness pedometer as monitoring tool</li> </ul>
3	Obese women tempted to eat when see delicious food and become distracted when cravings sets in	<ul style="list-style-type: none"> <li>• Increase awareness about the importance of being present or mindful to make valued choice of behaviour.</li> <li>• Train mindfulness skill or being more in contact with present moment.</li> </ul>	For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	Provide text and illustration to develop readers’ contact-with-present-moment skill <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• Intentional eating vs auto-pilot mode.</li> </ul> </li> <li>○ Enhance contact-with-present-moment skill via : <ul style="list-style-type: none"> <li>• Dropping anchor exercise</li> <li>• Mindful breathing exercise</li> <li>• Mindful eating exercise</li> <li>• Mindful drinking exercise</li> </ul> </li> </ul>
4	Obese women are cognitively fused with thoughts that hinder healthy eating behaviour change.	<ul style="list-style-type: none"> <li>• Increase awareness about the consequences of cognitive fusion.</li> <li>• Train cognitive defusion skill</li> </ul>	For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept.</li> <li>• Experiential exercise</li> </ul>	Provide text and illustration to develop readers’ cognitive defusion skill. <ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>• “Why language lead to suffering?”</li> <li>• Notice unhelpful thinking patterns</li> <li>• The existence of whisper from syaitan</li> </ul> </li> <li>○ Enhance cognitive defusion skill via: <ul style="list-style-type: none"> <li>• Introduce the concept of taawuz “Seeking protection of Allah from waswasah.”</li> <li>• Guided imagery of hearing thoughts from mind avatar</li> <li>• Guided imagery of watching thoughts as cue cards that walk on the stage</li> <li>• Thanking the thoughts exercise</li> </ul> </li> </ul>

				<ul style="list-style-type: none"> <li>• Rhyme the “thoughts” into a known song (e.g happy birthday song)</li> </ul>
5	Obese women are fused with the conceptualised self	<ul style="list-style-type: none"> <li>• Encourage perspective taking so participants can be more compassionate to self.</li> <li>• Train self-as-context skill</li> </ul>	<p>For every psychological flexibility element, provide (Hayes et al., 2012b):</p> <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	<p>Provide text to develop readers’ self-as-context skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>• The sky metaphor</li> <li>• Explore negative consequences of self-stigma.</li> <li>• Concept of self-compassion through “Two teacher metaphor”</li> </ul> </li> <li>○ Enhance self-as-context skill via: <ul style="list-style-type: none"> <li>• Compassionate friend exercise</li> <li>• Extending gratitude to the body (body scan).</li> </ul> </li> </ul>
6	Obese women lack ability in putting strong commitment in maintaining healthy eating behaviour.	<ul style="list-style-type: none"> <li>• Enhance participants’ capability in being committed to valued action.</li> </ul>	<p>For every psychological flexibility element, provide (Hayes et al., 2012b):</p> <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	<p>Provide text to enhance the capability to commit in valued action.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>• The values-commitment worksheet</li> <li>• Choice point worksheet.</li> </ul> </li> <li>○ Enhance committed to valued action skill via: <ul style="list-style-type: none"> <li>• Set values-based goals.</li> <li>• Explore barriers or obstacles and how to overcome them.</li> <li>• Discuss on self-monitoring tools.</li> </ul> </li> </ul>

### 5.3.2 Concept walkthrough with ACT experts

The aim of conducting concept walkthrough with ACT experts is to get feedbacks on the initial design principles of developing the module under study. It is conducted to answer research question 2.1 which is “What are the elements needed in designing a self-help book (*Making peace with diet*) for sustained dietary behaviour change, from the experts?” In this design phase, the criteria of module to be evaluated is its relevancy. The design should have content validity in which the module design is based on scientific knowledge.

In general, both experts agreed with the elaboration of initial design principles. However, some improvement are advised so as to suit the religious and cultural context of targetted readers among Malaysians. The following explains their suggestions of design principles improvement.

#### 5.3.2.1 Use examples that are familiar with the targetted readers

More than half of Malaysian population are Muslims. Specifically with regards to introducing the concept of “acceptance”, the author propose to choose Ramadan context as an example. In Ramadan, all adult Muslims had been trained to willingly accept the sense of hunger, thirst and tiredness throughout the day while continuing fasting. Both experts agreed with this suggestion as such example is familiar with the targetted readers whom are Muslims.

“Struggling is like a guest. If we have a guest coming to our house, he may be happy to be in the house. However, let say, we don’t entertain him. For sure the guest feel uncomfortable and he want to quickly return back. That’s why we need to learn to let it be and let it go. Just like the month of Ramadan. That’s why we don’t really feel hungry during ramadan. Even though there is hunger, but since we had let it be, we don’t think so much of it, we don’t struggle with hunger. That’s why we can proceed fasting until the end.” (E1)

“Accepting hunger is important... with regards to fasting, you may mention about hunger and thirst” (E2)

### ***5.3.2.2 Design exercises that are relevant with the context of targetted readers***

In the literature, to elicit values from the client, one of the exercise used is "Attend your own funeral" exercise. This exercise is relevant to the western culture as it is their custom to invite the close people (e.g family and friends of the deceased) to give final speech. However, this is not a practice in Malaysia. Expert E1 (for expert background, refer table 3.4) disagreed with using "Attend your own funeral" exercise.

"If it's a Westerner, when someone dies, the deceased is put in the casket. Then, if there are close friends, they will give their last words. That's their culture. Which is not our culture. I think chinese and Indian (of Malaysia) also don't practise this." (E1)

As a substitution, instead of "Attending your own funeral" exercise, expert E1 agreed with the "Tribute interview" exercise because that is closer to Malaysian culture. Expert E2 also agreed with the exercise with emphasis whatever values extracted from the exercise must be linked to the aim of the book which is changing eating behaviour.

### ***5.3.2.3 Include relapse management information***

The Transtheoretical Model (TTM) suggests that individuals progress through six stages of change: pre-contemplation, contemplation, preparation, action, relapse, and maintenance. Expert E2 suggested that the module should inform the reader about relapse. Since developing good eating habit is not an easy task, giving awareness to the readers that relapse is inevitable, may help them prepare so they are able to get back on track when it happens.

### ***5.3.2.4 Start the module with easy concept and move to more philosophical ones***

The initial design principles start with introducing values. Expert E2 does not agree with it because explaining values are "heavy topic" for her.

“Talking about values isn't easy in our context, you know. Values are very philosophical. So, if you arrange them from the beginning, they're already philosophical in nature. Or heavy. I'm sorry, but I find it quite challenging to explain values. In fact, you know, people don't understand what values are.” (E2)

She suggested to start with mindfulness concept before going to values and commitment. Acceptance should be arranged as last one because the concept is not very familiar for most people.

#### ***5.3.2.5 Use metaphor or simpler words to explain new concept***

In ACT, there are few concepts with jargon words. These concepts should be explained properly so the readers are able to understand.

“In ACT, we don't really explain or describe about the concepts. However, we usually gives them metaphor or use simple words so that they understand.” (E1)

For example, instead of using the word “cognitive defusion”, EI suggested to use “Untrapped from internal experiences”. She also suggested to use “The unwanted guest” metaphor to explain “acceptance” concept.

#### ***5.3.2.6 Provide information about selected values and choices of commitment as optional reading in additional chapters***

Values and actions require an individual to have minimal input. They need to know which values they intend to live upon and what actions they choose to commit. Without input, it would be big hindrance for the individual to design his action plan of changing eating behaviour. Thus, the researcher proposes to include two additional chapters which served as input for values to choose and actions to commit. Both experts agreed with this idea. Thus, the readers will be encouraged and invited to read additional chapters at the back of the book to give them some ideas about Qur'anic values and healthy eating.

### 5.3.3 Revised design principles of self-help book

After the concept walkthrough with the experts, changes were made particularly with regards to content selections in terms of metaphor and suggested activities. The following table shows revised design principles with the bolded ones shows the changes made. The ones omitted were strikethrough, due to its unsuitability with context of targetted readers.



Table 5.3 Revised design principles of self-help book

No.	Domain	Main design principles	Elaboration of principles
1	Acceptance and Commitment Therapy	1.1 Start with concept of valued living (Ciarrochi, Bailey, et al., 2014; Lee-baggley, 2019).	1.1.1 The key to sustained behavioural change is to link the new behaviour with motivational values.
		1.2 Explain “experiential avoidance” and “creative hopelessness” first before introducing the concept of “acceptance” (Merwin et al., 2023)	1.2.1 Introduce concept via identifying patterns of experiential avoidance and their costs.
		1.3 For every psychological flexibility element, provide (Hayes et al., 2012b): <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>	1.3.1 Provide text and illustration to develop readers’ values clarification skill. <ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>• <b>“Tribute exercise”</b>: Imagine you’ve passed away and your loved ones are being interviewed about you.</li> <li>• The differences between values and goals.</li> </ul> </li> <li>○ Enhance values clarification skill via: <ul style="list-style-type: none"> <li>• Identify values in key life domains</li> <li>• Clarifying on how changing eating habit is connected to personal values.</li> <li>• “Finding meaning in pain” exercise</li> <li>• <b>Provide information on Qur’anic values related to eating behaviour in additional chapter as optional reading.</b></li> </ul> </li> </ul> 1.3.2 Provide text and illustration to develop readers’ acceptance skill

			<ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>● Identify patterns of experiential avoidance and their costs.</li> <li>● <b>“The unwanted guest” metaphor</b></li> <li>● Reflect on the skill being trained in the fasting month of Ramadhan.</li> </ul> </li> <li>● Enhance acceptance skill via: <ul style="list-style-type: none"> <li>● Urge surfing exercise</li> <li>● “Make space for emotion” exercise</li> <li>● Willingness pedometer as monitoring tool.</li> </ul> </li> </ul> <p>1.3.3 Provide text and illustration to develop readers’ contact-with-present-moment skill</p> <ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>● Intentional eating vs auto-pilot mode.</li> </ul> </li> <li>○ Enhance contact-with-present-moment skill via: <ul style="list-style-type: none"> <li>● Dropping anchor exercise</li> <li>● Mindful breathing exercise</li> <li>● Mindful eating exercise</li> <li>● Mindful drinking exercise</li> </ul> </li> </ul> <p>1.3.4 Provide text and illustration to develop readers’ cognitive defusion skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via: <ul style="list-style-type: none"> <li>● “Why language lead to suffering?”</li> <li>● Notice unhelpful thinking patterns</li> <li>● The existence of whisper from syaitan</li> </ul> </li> <li>○ Enhance cognitive defusion skill via:</li> </ul>
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			<ul style="list-style-type: none"> <li>• Introduce the concept of taawuz “Seeking protection of Allah from waswasah.”</li> <li>• <b>Guided imagery of hearing thoughts from mind avatar</b></li> <li>• <b>Guided imagery of watching thoughts as cue cards that walk on the stage</b></li> <li>• Thanking the thoughts exercise</li> <li>• Rhyme the “thoughts” into a known song (e.g happy birthday song)</li> </ul>
			<p>1.3.5 Provide text to develop readers’ self-as-context skill.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• The sky metaphor</li> <li>• Explore negative consequences of self-stigma.</li> <li>• Concept of self-compassion through “Two teacher metaphor”</li> </ul> </li> <li>○ Enhance self-as-context skill via : <ul style="list-style-type: none"> <li>• Compassionate friend exercise</li> <li>• <del><b>Extending gratitude to the body (body scan).</b></del></li> </ul> </li> </ul>
			<p>1.3.6 Provide text to enhance the capability to commit in valued action.</p> <ul style="list-style-type: none"> <li>○ Introduce concept via : <ul style="list-style-type: none"> <li>• The values-commitment worksheet</li> <li>• Choice point worksheet.</li> <li>• <b>Include information about relapse management (transtheoretical model)</b></li> </ul> </li> <li>○ Enhance committed to valued action skill via :</li> </ul>

			<ul style="list-style-type: none"> <li>• Set values-based goals.</li> <li>• Explore barriers or obstacles and how to overcome them.</li> <li>• Discuss on self-monitoring tools.</li> <li>• <b>Provide information on healthy eating in additional chapter as optional reading.</b></li> </ul>
2	Therapeutic reading (bibliotherapy)	2.1 Provide text that allow the process of identification, projection, catharsis and gaining insight to occur (Shrodes, 1950)	2.1.1 <ul style="list-style-type: none"> <li>• Include relevant short stories to bring about identification, projection and catharsis process.</li> <li>• Provide reflection exercises to elicit insights.</li> </ul>
3	Instruction message design	3.1 Apply communication theory in instructional design (Hartley, 2004; Richey et al., 2011a)	3.1.1 <ul style="list-style-type: none"> <li>• Design the layout using guidelines of text designs</li> <li>• Write organized messages which are in orderly state, rich in pattern and structure, highly interconnected and containing a good deal of redundancy.</li> <li>• Manage information load.</li> <li>• Use cueing techniques.</li> <li>• Use content-generated attention.</li> </ul>
		3.2 Apply learning theory in instructional design (Richey et al., 2011b)	3.2.1 <ul style="list-style-type: none"> <li>• Message design strategies</li> <li>• Chunking</li> <li>• Mnemonics</li> <li>• Advance organizers</li> </ul>

## **5.4 DEVELOPMENT PHASE**

Development phase focuses on generating and validating selected learning resources. During this phase, the researcher built learning content and learning assignments based on the evaluated design principles of previous phase. Hence, this section describes overall strategies in developing and evaluating the “prototype 1” of ACT-based bibliotherapy module (*“Making peace with diet”* self-help book) for sustained dietary behaviour change.

### **5.4.1 Module development (prototype 1)**

The researcher has selected three primary elements to actualize the design principles: short stories, articles, and activities. These elements are strategically sequenced to align with the beginning, middle, and end of the instructional strategy.

Each chapter of the book begins with a short story that subtly introduces issues commonly faced by overweight or obese readers. The purpose of these stories is to motivate readers by allowing them to identify with the issues presented. If readers perceive the chapter as relevant to their own lives through the short story, they are more likely to continue reading, thereby enhancing their engagement and comprehension.

Following the short story, the researcher develops the core content of knowledge and skills through written articles. To enhance readers' understanding, tables and diagrams are included. Most chapters begin with an introduction to selected elements of psychological flexibility (e.g. contact with the present moment or clarification of values) through detailed conceptual elaboration. After explaining the concept, the next subtopic provides additional examples to further illustrate and reinforce the material.

Finally, since ACT (Acceptance and Commitment Therapy) is a behavioural approach, practice through action is crucial. Thus, all chapters conclude with relevant activities such as reflection, experiential exercises, and journaling. These activities are designed to improve readers' psychological flexibility by allowing them to apply and practice what they have learned throughout the chapter.

Table 5.4 Overview of the book content (prototype 1)

Chapter	Title	Content	Page number	Number of pages
1	Introduction ( <i>Pengenalan: Melentur tabiat makan secara rahmah</i> )	Introduction to psychological flexibility	4-16	13
2	Lead a conscious life, focus on the present moment. ( <i>Hidup secara sedar, beri perhatian masa sekarang</i> )	Contact with present moment	17-30	14
3	Free yourself from the traps of the mind ( <i>Merdekakan jiwa daripada perangkap fikiran</i> )	Cognitive defusion	34-54	21
4	Compass of values ( <i>Kompas nilai</i> )	Values	55-85	31
5	Make room for what is beyond control ( <i>Beri ruang untuk yang di luar kawalan</i> )	Acceptance	86-117	32
6	Find your “observer-self” ( <i>Posisikan diri pada bahagian yang mampu memerhati</i> )	Self-as-context	118-148	31
7	Commit to action motivated by values ( <i>Komited bertindak bermotivasikan nilai</i> )	Committed action	149-177	29
8	Closure- Psychological flexible ( <i>Penutup – Kemahiran psikologi yang fleksibel</i> )	Summary of psychological flexibility	178-184	6
9	Special topic: ( <i>Makan dengan perspektif wahyu</i> )	Values from the Qur’an	186-229	44
10	Special topic: ( <i>Memaknai tabiat makan sihat</i> )	Principles of healthy eating	230-243	14

#### 5.4.2 Experts’ validation of module (prototype 1) via interview

Prototype 1 of ACT-based bibliotherapy module (“*Making peace with diet*”) was evaluated by two experts. The questions asked during the interview sessions were intended to answer research question 2.2 which is “How can psychological flexibility

elements identified as necessary by the needs analysis, be incorporated into the module?"

The answers from ACT counsellors provide information of the module's evaluation which are content validity, construct validity, expected practicality and expected effectiveness. Figure 5.2 shows the themes of module quality criteria that answered the research question mentioned.

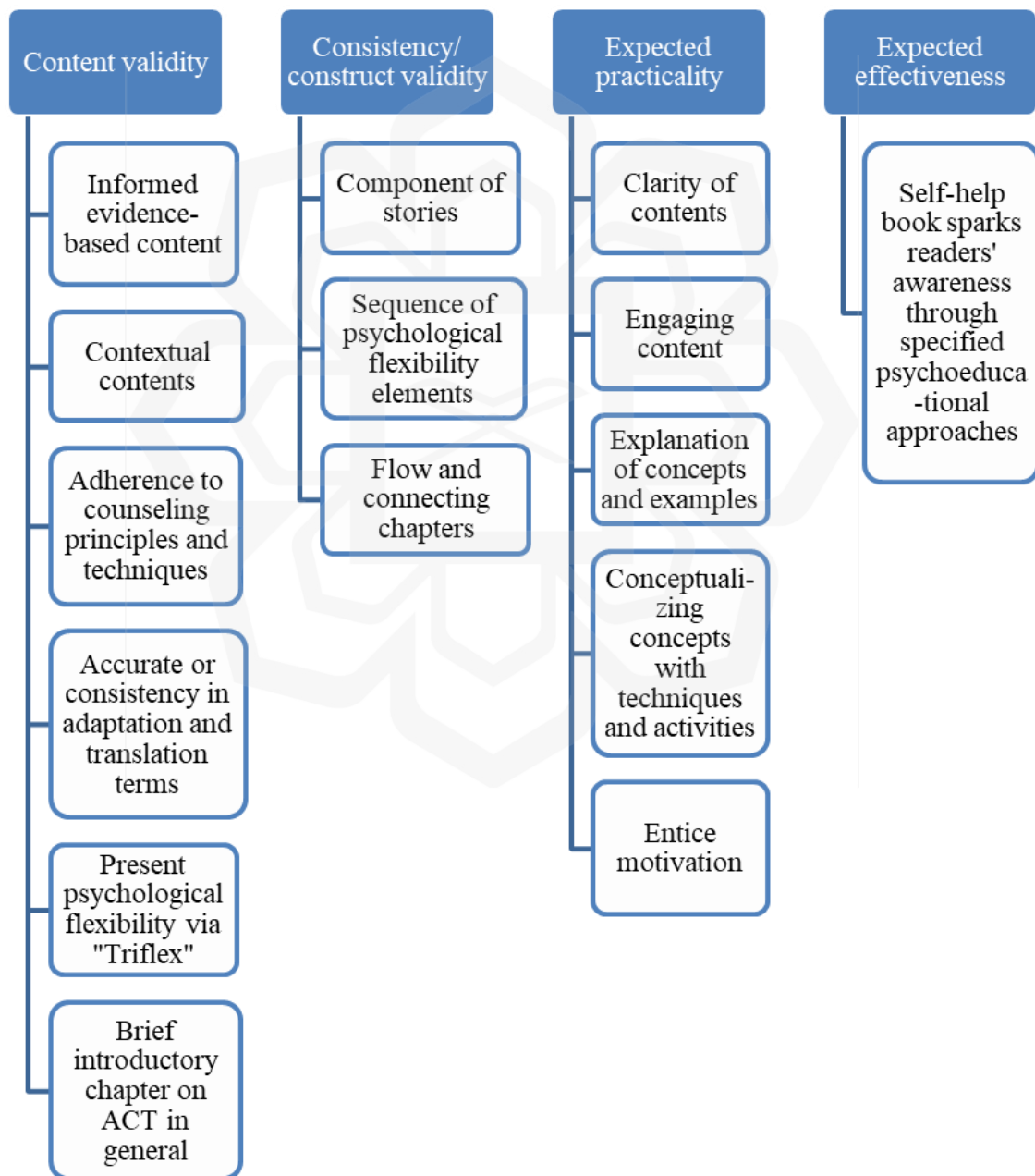


Figure 5.1 Evaluation of prototype 1 based on module quality criteria among experts

#### ***5.4.2.1 Content validity of prototype 1***

##### **Theme 1.1 Informed evidence-based content**

Both experts agreed that the content of prototype 1 is accurate based on the elements of Acceptance and Commitment (ACT).

“I actually feels that the book in general has covered quite generally the idea or the essence of ACT. It does use a lot of... it does follow according to the elements of Acceptance and Commitment Therapy which is good.” (E4, DU 2)

However, E3 critiqued the fact that the book lack of citation and referencing. Thus, it is suggested that the book include citation to develop trusts among the readers towards the author.

“I feel like, it needs to be, I think I mentioned it as well, referencing and citation. Because it will create credibility. For the person reading, the reader, and trust.” (E3, DU 31)

##### **Theme 1.2 Contextual contents**

Both experts agreed that the prototype 1 was lacking of information about context. In terms of targetted readers, E3 was unsure to whom the book is developed for.

“The context, I think we... its like the context of the book, where this book sits, it needs to be made clear again.” (E3, DU 73)

E4 suggested to write a paragraph of related context for some articles to avoid the readers from misunderstood the message.

“Where you show the readers to compare what is psychological flexible and what is not, I would recommend to give a bit more context prior to this activity.” (E4, DU 36)

For example, when the book introduce two different phenomena of psychological flexibility and psychological rigidity, the context of example should be made clear first. This is important to avoid overgeneralisation because different context will lead to different choice of action.

### **Theme 1.3 Adherence to counselling principles and techniques**

Next, the book is psychoeducational material that intend to transfer psychological knowledge with some minimum amount of skill enhancement. Hence adherence to counselling theory, principles and techniques will gives the therapeutic effects. A wrong way of presenting the concept might result in misunderstandings by the reader or create resistance to change. For example, since the book is based on behavioural therapy (not cognitive therapy), it is not in line with the said theory if the book invite the readers to evaluate the thoughts.

“And then at the choice point I remember you said to let us see the thoughts are true or not. Which is not defusion is about.” (E3, DU 129)

“Rather than labelling it as not good. Rather than labelling it as something we need to deal with, how can we invite this feelings, you know? And how we can address it in such a way that it is healthy and we are no longer in conflict all the time with the word of craving or the feeling of craving.” (E4, DU 66)

The behavioural action is also important aspect of the chosen theory. Hence emphasis on philosophical concept might not be so helpful as compared to giving direct example of behavioural action.

And I think again here, there was some nuances need to be corrected *lah*.

For me the most important part is “*tidak fleksibel* “ would be “I am not living with my values” right? It is about the action. So everytime it posses the thoughts, then I was like “what about action”. (E3, DU 95)

We are not trying to, “Craving is not good. We should shut all the voices of craving”. But rather now it is showing up, what do we do with this thoughts. What do we do with the thoughts of this craving, right? (E4, DU 66)

Another challenging part is not to impose personal values. Even though values are important to motivate an individual's action, function of a counsellor is to help the client realise what values are important to them and further allow them to connect with their chosen values.

“And then I think, certain nuances are in term of ACT, *uhh*, I think need to be careful about the phrasing and language. Especially “*syukur*” I could feel that is your values. Sometimes, it is not everyone's value. Or they may not feel that way about certain things. You can leave it open. For example with present moment, where you say, “*sedarkan diri kepada kesyukuran*”. Then I feel , could you just “*sedarkan diri*” its like simplify things. And leave it open for them to connect to whatever is their values.” (E3, DU 31-33)

It is also encouraged for the author to use positive connotation rather than negative connotation.

One more in general, a suggestion. Is not to use negative connotation. *Contohnya macam muka surat 60, untuk lathan item 1. “Saya tidak mahu jadi anak yang susahkan ibu jika saya sakit.”* Because “*tak mahu*” is negative connotation. “I Don't want, I don't like”. The word don't is a negative connotation. So I would maybe change it to a positive connotation like “*Saya mahu meringankan beban ibu saya.*” (E4, DU 88)

#### **Theme 1.4 Accurate or consistency in adaptation and translation terms.**

ACT that is originated from America, utilises a lot of metaphor to explain psychological concept. The experts commented that some metaphor in prototype 1 require adjustment to ensure accurate metaphor adaptation and meet its intended purpose.

“You don't choose to become the weather. Its more that you are the sky, and the sky doesn't change and you allow the weather to come and go. I think you are not trying to say that you are the weather that is always changing. But that you can allow the weather to be, come and go.” (E3, DU 245)

“You talk about “us” being the driver. The driver of the bus. Maybe in the end of the example, you can also inform the readers ... how does this inform the reader being the driver of their life? I think it will be at the closing. Because the walk through experiential activity is good, but then how does this inform the readers about being the driver of their life. So I believe what we want to encourage the readers are to be able to choose their actions.” (E4, DU 96)

Other than metaphor adaptation, accurate translation from English to Malay is also required. Some of the words from original works, when translated into Malay language become words that are seldom used. Due to unfamiliarity, the author tends to use more familiar words. However, this action might change the meaning of intended input. Thus, maintaining the closest translation is better option.

“You said the “cycle of bad habit”. Is that from “diet trap” or...(the original exercise use the word cycle of suffering) “*sengsara*”. Why not? Because I think if you say bad habit, then you get stuck in the debate of what is bad habit.” (E3, DU 191-199)

“Again, the terminology, you flip flop with “*jiwa*” and “*pengalaman dalaman*”. So which one you want to use. If you use “*jiwa*”, sometimes your “*jiwa*” is talking about the mind. Sometimes you talking about emotion. So, maybe you have to be more specific. *Pengalaman dalaman*, then are you talking about thoughts or are you talking about the emotion.” (E3, DU 167-169)

### **Theme 1.5 Present psychological flexibility via “triflex”**

The developed book (prototype 1) is somewhat thorough and extensive as it covers all elements of psychological flexibility. However, the author, who is still a novice in ACT, presented it in an overwhelming manner. Hence, it is suggested that the content of the book be simplified by using the triflex instead of hexaflex.

“I would say it is... it has captured again, the essence of it. I was thinking for someone who may not be familiar with ACT, may not be understanding, you know what approach is this book based on.” (E4, DU 4)

“I think it is thorough and extensive. Yeah. I feel like, maybe you can stick to triflex, rather than the entire hexaflex. Because the more content you put in, so more, every part needs to be really assessed carefully. Yeah. And then the more you put in, the more phrases where that nuances may make mistakes and stuff like that. It get confusing for the reader.” (E3, DU 41-45)

### **Theme 1.6 Brief introductory chapter on ACT in general**

Introduction chapter is important to explain the book title and define psychological flexibility as its aim.

“Because when I read the *tajuk* I was “*Owh, berdamai dengan diet.*” So I thought it could be for just any demographic who just want to have beter diet, You know. But when I read the back of the page and *dalam kandungan dia*, all the *isi* , the content *dalam*, I realise it is more created towards the obesity patients. It was for those who perhaps, you know. would like to explore how to lose weight, or people who are going through binge eating or people who are on larger size.” (E4, DU 12)

“Generally the chapter is good. The chapter did cover about the concept of psychological flexibility rather well. Just that I hope there is a definition for it. So that we can understand what is psychological flexibility better *lah*. And provide more context in the example.” (E4, DU 46)

At the same time, it is also the right place to present the information about ACT and evidences of its effectiveness.

“Maybe a brief description in the *pengenalan* you know, could help me understand better on what ACT is about and get me excited to learn more after that you know. I guess, by talking about including the ACT theoretical framework, maybe that would be the information that I would like to be included as well.” (E4, DU 8-10)

“Yeah, introduction. What is ACT. To introduce ACT and that’s where you need to make references and the sources of evidences to show it works. What is the format of this book, what is the purpose of the book. Like I mentioned earlier, it is meant to be used with a professionals, or is it just a manual? Important to mention that it is not a sort of absolute solution. It is not a quick-fix. That is what people always look for. But so we need to balance that. They are looking for quick-fx, at the same time, whether it is accessible for them , get something out of it.” (E3, DU 39-49)

#### ***5.4.2.2 Consistency / construct validity of prototype 1***

##### **Theme 2.1 Component of stories.**

Stories are important as to provide therapeutic effects for bibliotherapy. However, it is important to limit the number of characters to help the readers understand the journey of each characters.

“Too many characters. (I suggest) one character, you can see the whole process. I mean for me, that it would be beter. Because I felt every section I had different stories. I have to reoriented myself. So if it was the same character from the start, they follow you as a counsellor then you see everything comes together. Is a bit easier. Because when it came to the end, I was very, everything very fragmented *loh.*” (E3, DU 19-25)

Keep reviewing the stories to eliminate any judging statements or phrase. Judgmental stories might demotivate readers.

“Yeah, I feel judged. That s why I think the intro, you explain actually this story is adapted from where... they may not be my story but I as a dietitian , I get a lot of stories from clients. Then you can go to it. I feel like, I really like the sentiment that you *ay*, to feel they are not alone. I think that is important.” (E3, DU 19)

“Or maybe judging in terms of larger size individual. Not really judging actually. because don’t really talk about it in very judging way but it’s very subtle on the tone of it. Because Ayat, one thing I really appreciate a lot what you do right is that you really did your very best to not use judgmental quotes which I very very appreciate. But I understand the challenge of it.” (E4, DU 118)

## **Theme 2.2 Sequence of psychological flexibility elements**

In clinical counselling practice, an ACT practitioners can plan the session with any component of psychological flexibility that he/she thinks suit the best for the clients. However, if the treatment is delivered through psychoeducational book, here comes the question “which element should I start with?” After reviewing prototype 1, expert E3 suggested to begins with contact with present moment and values.

“From what I remember, I like this chapter (referring to “clarification of values”). I was like... can you just do this part like this one, then you expand. Then you can touch the other skills, as you go along. You don’t talk about it as a start. You can talk present moment at the start. Because that goes into being mindful. Then you go into values.” (E3, DU 149-153)

Commitment should come close to values.

“I have found your values and committed action like, okay. This is workable. And then everything in front is maybe a bit hard to grasp. When it is all segmented.” (E3, DU 71)

The concept of acceptance is quite difficult to grasp. Hence, it should not be placed at the front. It is best to arrange the concept of acceptance after “committed action” has been explained.

“Willingness, I don’t know if it is too early to introduce here or not. It is a bit heavy. Because we haven’t talked about the issue of... When you actually take valued, committed action right, that’s where the discomfort comes in. That’s when you talk about willingness and everything.” (E3, DU 175-189)

## **Theme 2.3 Flow and connecting chapters.**

Expert E3 advise the content of prototype 1 to be reviewed to avoid unnecessary repetition.

“Commitment, chapter ... Yeah I think I also mention a little bit repetitive with the previous section. We need to clear it up a little bit.” (E3, DU 255-257)

Some activities, the rationale of doing it is not described. This might demotivate the reader to practice it.

“So for page 106, this activity you did is quite .. you walk through the readers on experiential activity, perhaps you might want, before that, before that or after that, provide the objective why we are objectifying feelings. Because you mention “*adakah permukaannya licin..*” , what is the temperature of it. So we are objectifying it right. So we kind of need to explain “why we are doing it?” Because the readers can go through it and say yes, I see it , but how it relate to acceptance?” (E4, DU 90)

Other than that, it is also suggested to connect the reflection activity with the chapter topic.

I think there is one part of the activity that we did a bit of reflection. I think was on page 29. That was a lot of reflection activity and I hope maybe after the reflection activity it will follow by recognizing and acknowledging without reacting. Just to emphasize more on the noticing skill within the present moment skill (since the chapter is about contact with present moment). (E4, DU 48)

#### ***5.4.2.3 Expected practicality of prototype 1***

##### **Theme 3.1 Clarity of contents**

There are several strategies to help the readers understand the content better. Elements such as illustration and pictures will help the readers grasp information. Since a lot of concept in ACT can be explained in metaphors, these metaphors can be illustrated to help readers visualize.

So maybe drawings can be helpful you know. Picture can be helpful as well. So they can visualize. "Owh I am not the person in the passenger seat. But I am the person driving." So I think a lot of this would be helpful if there is illustration as well. To help them visualize all these beter. Especially the metaphors *lah*. ACT is so big with metaphor *kan?* So I think *kalau ada gambar-gambar boleh* illustrate all these metaphor a bit better. The concept a bit better for the readers juga. (A4, DU 112)

Selection of words should also consider not taking jargon words. The words used should be of layman's terms.

Because when you talk about all this "obesogenic", yeah. So like, the term comes to me as a layperson, I don't know what it means. (A3, DU 31)

So I think for the first chapter, which aims to talk about psychological flexibility. I believe the word "psychological flexibility" is still a bit foreign to a lot of readers. (A4, DU 36)

### **Theme 3.2 Engaging content**

Engaging activities help the reader conceptualize their understanding. It is as if the reader is experiencing the learning, not just merely reading.

I like the activities a lot. I felt it really help me to conceptualize my learning. I think it was the values that I really like. And it was very easy to understand. (E4, DU 110)

The values part. Linking the values to goals. I think that part is very helpful. (E3, DU 269)

### **Theme 3.3 Explanation of concepts and examples.**

ACT concepts are very new to layperson. Hence expert E4 emphasized the role of explanation and examples so that the concepts can be understood better.

I would say generally , there are part that is difficult to understand. Although the concept may be a bit more foreign for them to understand, I think there is something that is quite understandable because ACT is very different form of learning to grasp. It is very hard for someone to say “owh I can just observe my thoughts and my feelings”. A lot of time we identify with them so strongly *kan*. “I am sad. How can you just tell me to observe my feeling”. So I think that is where the explanation will come in very helpful. Like why is it important that we are taking the driver’s position rather than the passenger’s position. Why are we conceptualizing. Why are we seeing emotions as *suhu*, why are we objectifying it as *bentuk*. Why are we doing this. Because we want to tell our readers that “we are not our feelings”, “we are not our thoughts”. Just because we feel something, just because we feel something, it is not fact. I think that is something you’ve written in your book very well as well. *Itu bukan fakta*, right. It comes and go like wave *ombak*. It comes and go. And we can be like the seaweed. That just flows along with it. So I think that is something that. So I think explanation and example are very helpful. (E4, DU 112)

Clear instruction with examples may guide the readers on how to do activities.

In terms of the instruction of the activity right, I would say it was very clear. I don’t think there is an issue. I was able to follow every steps of the ways. And I like how you do progression. For example you came out with on page 90. You give the situation and then the strategy. And then you add on the next column. This is the situation and then the strategy. And then *kesan jangka masa pendek* and then later on we talked about the long term effects. So I think it is a very good progression to teach and also understand the concepts better. And then the spaces of column so they can fill it in their own. So I really like it. Its very clear. Yes I would say so. (E4, DU 108)

### **Theme 3.4 Conceptualizing concepts with techniques and activities**

Both experts suggested to have a section of the book which provides an overview or big picture of whole concepts. The six elements of psychological flexibility should be linked to one another so that the readers are able to understand how to practise them after they have completed reading all of them.

... I would say , perhaps it would be helpful if there is a last chapter that talks about how to conceptualize the each week as a whole. Right now because there is a lot of information, as someone who is reading it , it was like “eh, I love each of the chapter but I don’t know how it links from one to another”. So maybe like a last chapter that say on “how can we utilize all the six, seven” how it would look like , in a more systematic like a flowchart. It would help me to see better. How it would look like. Right now , I enjoying each chapter on its own without seeing how it is going to help me week by week. So maybe the last page or the last chapter maybe you could put like “conceptualization” how do you conceptualize my personal diet program , you know... Like a how it would look like. (E4, DU 18)

Like I said, I think its too big. To address all. I mean its all there, but because it is too segmented . yeah. As a user, it might be a bit hard to link everything. Because there are a lot. Like sometimes as I go along, I can see that you are trying to introduce one part and later choose the next part. It’s a bit repetitive and if you stop halfway, for that one week, I am not sure if they have understanding of this thing. Because we stop here. Instead of the full thing. (E3, DU 63-65)

One way to improve this is by providing a worksheet that show overall concept of psychological flexibility.

Maybe a page where you can give them an opportunity to write down, like what are the activities to do every week. What are the summary of everything that I should do each week. (E4, DU 18)

Its basically like the last chapter where they ... Ah, okay, with all that being said, so lets do this together. On week 1, we analyze like how we carry out or plan on how do we .. how does a psychological flexibility plans look like. And then on week 1 lets focus on contact with present moment. And then the activity is you know... reflection section, and then so on and so forth. I think that would be helpful to get them to start working on their own. (E4, DU 106)

### **Theme 3.5 Entice motivation**

Learning motivation is very important. Information in the introduction chapter is very important to help the readers see where the book is heading and how it will meet their needs.

I would say they would be somewhat interested , able to finish the book. one thing I guess that all authors kind of need to be more aware is how do we entice the readers right in the beginning of the book. So I would think the introduction could be very... we need to capture , you know, the essence like you know, if you were to boil down the whole entire book into this concentrated “*kuah*” right , what would it be. And put it in the introduction. So I think it’s the introduction. If the introduction can encapsulate like, you know... what ACT is and how can we attract them to read this book in the perspective of ACT, I think it would be very helpful for them to finish the book. If they go in, not knowing “Eh, what is this acceptance and commitment therapy”, why do I need to *berdamai dengan diet* like “why?” diet is diet *lah*. Not easy you know. (E4, DU 116)

From time to time, rationale of activities should be mentioned. This is also to motivate the readers get involve with the exercises given and not only passively reading it.

Why the author suddenly talk about “present moment” *Kenapa dia cakap tentang “acceptance”*. Why? Because acceptance and commitment therapy tells that da..da..da.. Maybe a brief description about why we have chosen “Acceptance and Commitment Therapy”. What are the component that I as a reader will look forward looking at. And how is it relate to dieting. Yeah I think that would be quiet helpful. (E4, DU 4)

#### *5.4.2.4 Expected effectiveness of prototype 1*

#### **Theme 4.1 Self-help book sparks readers’ awareness through specified psychoeducational approaches**

In terms of effectiveness, this book as psychoeducational material can meet its aim in transferring knowledge and give awareness. Since counselling does not happened, it is not so promising to expect the reader to obtain improved psychological flexibility just like if they attend counselling session. Expert E3 believed its hard to help the readers improve psychological flexibility just by reading the book.

It may be hard. I wont lie. I mean without support. I think it could be hard. (E3, DU 85)

Expert E4 thought that the book would be helpful in creating awareness and spark some new perspective among the overweight and obese population.

For self-help right, it is very hard for us to see vast change. I think it may not immediately increase someone's psychological flexibility. But I think it will create a lot of awareness. Awareness of a lot of new concepts that perhaps, and new perspective as well. Especially towards people who have not have this kind of diet before. Its like I've never seen how I can actually accept all of my thought and my feelings towards, you know, eating for example. So this is a new idea that you are giving to the readers. I will not say it will increase psychological flexibility but it will help them to be more aware of like "Hey, ya. This is one thing that I can think about." (E4, DU 28)

#### **5.4.3 Module development (prototype 2)**

The formative evaluation of prototype 1 guided the development of prototype 2. Changes were made based on comments from expert E3 and E4.

In terms of content validity improvement, firstly, citation and bibliography are added to prove its basis are of credible resources (see Appendix M). Where necessary, context of dialogues or examples are explained beforehand to avoid inaccurate generalisation. Statements or articles that seemed to convey concept that is not in line with the chosen theory are corrected. More examples of behavioural actions are added. This is to show the reader that the book is based on behavioural therapy that requires action and not merely reading and thinking. All parts that posed the author's personal values are removed. Instead, readers are invited, if they are interested, to read specific chapter of the book that elaborate Quranic values related to eating behaviour. Three chapters are dedicated as introduction to the book which cover the topics of experiential avoidance, valued living and ACT. The contents from prototype 1 are also restructured so that psychological flexibility is presented as triflex instead of hexaflex.

In terms of improvement in module consistency, firstly, the characters of the stories are being limited to two which are Nurul and Shahrul. Nurul represents an obese university student who is staying in the university. Shahrul represents an obese working man who is staying with his family. These two made up characters are chosen so that more readers are able to relate with the book and not restricted to one

specific type of demography. These provide the readers with man and woman lifestyle as well as life as a student and life as a working individual. Secondly, based on the comments, after the introduction part, the author continues the chapter with “contact with present moment” and “self-as-context”. It is then followed by “clarification of values” and “committed action”. Lastly, “cognitive defusion” and “acceptance” are presented. So, putting it as a triflex, it starts with the concept of “being present”, followed by “doing what matters” and end by “opening up to experiences”.

In terms of expected practicality, firstly, five illustrations are added to present selected concepts and metaphor. Jargon words are replaced with suitable layman’s terms. One chapter which dedicated as the conclusion presents psychological flexibility as a big picture. Activities and exercises that integrate all elements of psychological flexibility are provided in this chapter. A link to a softcopy of worksheet that gives guidance of daily experiential learning is given at the introduction chapter. Where necessary, rationale of activities are explained beforehand to entice readers’ motivation in learning.

The manuscript of this second prototype were sent to a layout designer. There were continuous discussion between the researcher and layout designer to ensure the design follows the principles in message design theories (communication theory and learning theory). After this prototype 2 is published and printed, it is evaluated by the readers of targetted population during the implementation and evaluation phase.

## **5.5 CHAPTER SUMMARY**

This chapter has described all the processes in designing and developing the ACT-based bibliotherapy module ( “*Making peace with diet*” self-help book ) for sustained dietary behaviour change. The description of the process began with identifying the initial design principles for the first prototype, followed by the stages of developing, evaluating, and refining the first prototype. Finally, the module (Prototype 2) was prepared for evaluation by a group of overweight or obese individuals during the implementation phase of this study, prior to further refinements that led to the final prototype.

## **CHAPTER SIX**

### **FINDINGS FOR EVALUATION PHASE (PHASE 3)**

#### **6.1 INTRODUCTION**

This chapter presents the findings for evaluation phase of DDR. In this phase, three data collection methods are done which are interview, journal entry and psychological assessment using AAQ-W questionnaire among the overweight and obese participants. The objective of this chapter is to evaluate the usability of the developed ACT-based bibliotherapy module (“Making Peace with Diet” self-help book) for sustained dietary behaviour change.

The chapter is divided into five main sections. The second section reports the demographic data of the informants. The third section describes the implementation phase which is the 4-week bibliotherapy program. The fourth section explore the feedbacks from the research participants in terms of the module’s practicality and effectiveness.

#### **6.2 DEMOGRAPHIC PROFILES OF THE INFORMANTS**

For this evaluation phase of the DDR, the informants recruited were female young adults who were either overweight or obese. Five participants were interviewed to assess the practicality and effectiveness of Prototype 2, “Making Peace with Diet.” These young women represented individuals who were attempting to change their eating behaviours through bibliotherapy intervention.

All participants were within the young adult age range of 22 to 25 years. Each had previously attempted to lose weight by modifying their eating behaviours but struggled to sustain these changes, which eventually resulted in weight regain. Brief demographic information about the informants is presented in the following paragraphs.

R1 is a 25-year-old participant who reads recreational books two to three times a week for leisure or therapeutic purposes. With a BMI of 34.3, categorised as Obese II, she previously attempted weight loss through cardio exercise and dietary management. In this study, she aimed to improve several eating behaviours, including reducing sugar and carbohydrate intake, choosing healthier food options, and increasing her protein intake.

Meanwhile, R2, aged 23, shares a similar reading habit, also engaging with recreational books two to three times weekly. With a BMI of 35.7 kgm<sup>-2</sup> (Obese II), her earlier weight-loss efforts centred solely on fasting. During the study, she intended to modify her eating habits by reducing sugar consumption and controlling portion sizes.

At the same time, R3, who is also 23 years old, reads recreationally about once a month. She has a BMI of 35.3 kgm<sup>-2</sup>, also within the Obese II range, and had previously attempted to lose weight through intermittent fasting and eliminating carbohydrate intake. For the purpose of this study, she focused primarily on reducing her portion sizes as the key behaviour change she wished to address.

Next is participant R4, aged 24, reads recreational books daily. With a BMI of 35.2 kgm<sup>-2</sup> (Obese II), her past weight-loss attempts involved cutting down on sugar and carbohydrates. In participating in the study, she continued to prioritise reducing sugar intake as her main dietary behaviour change.

Finally, R5 is the youngest participant at 22 years old and reads recreational books two to three times a week. With a BMI of 24.1 kgm<sup>-2</sup>, she falls within the overweight category and had previously practised intermittent fasting as a method of weight control. During the study, she aimed to increase her fibre intake while reducing sugar consumption to support healthier eating habits.

Table 6.1 The demographic profiles of the overweight and obese females participants

<b>Pseudoname</b>	R1	R2	R3	R4	R5
<b>Age</b>	25	23	23	24	22
<b>Frequency of reading recreational book for leisure or therapy</b>	2-3 times a week	2-3 times a week	Once a month	Daily	2-3 times a week
<b>Weight</b>	87.9	93.5	102	89	64
<b>Height</b>	160	162	170	159	163
<b>BMI</b>	34.3	35.7	35.3	35.2	24.1
<b>BMI status</b>	Obese II	Obese II	Obese II	Obese II	Overweight
<b>Previous method used to lose weight</b>	Cardio exercise and dietary management (low carbohydrate, low fat and high protein diet)	Fasting	Intermittent fasting and cutting off carbohydrate intake.	Cutting sugar and carbohydrate	Intermittent fasting
<b>Eating behaviour that are intended to be changed</b>	<ul style="list-style-type: none"> <li>• Reduce sugar intake</li> <li>• Choose healthier food option</li> <li>• Increase protein intake</li> <li>• Reduce carbohydrate intake</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce sugar intake</li> <li>• Reduce portion size</li> </ul>	Reduce portion size	Reduce sugar intake	<ul style="list-style-type: none"> <li>• Increase fibre intake</li> <li>• Reduce sugar intake</li> </ul>

### 6.3 IMPLEMENTATION PHASE

The aim of the implementation phase is to set up the learning environment and engage the learners. Typical procedures during this phase includes preparing the teacher and the learners (Branch, 2009). Since this study is about psychoeducation through self-help book, no counsellors or dietitians are involved in its implementation. So the focus are towards the learners among the overweight or obese female young adults.

When a research participant has been identified and scheduled for participation in the four-week bibliotherapy program, she was invited for initial meeting with the researcher. She received a pre-program communication about the specifics of the program as following:

Table 6.2 Learner Plan for “*Making peace with diet*” Self-help Book Program

Learner identification	<ul style="list-style-type: none"> <li>• Female</li> <li>• Overweight or obese</li> <li>• Intend to change eating behaviour through psychoeducation reading material</li> </ul>
Schedule	<ul style="list-style-type: none"> <li>• Week 1: To read chapter 1, 2 and 3</li> <li>• Week 2: To read chapter 4</li> <li>• Week 3: To read chapter 5 (Optional chapter 8 and 9)</li> <li>• Week 4: To read chapter 6 and 7</li> </ul>
Notification	<ul style="list-style-type: none"> <li>• The book will be given by hand or post before May 2024.</li> <li>• At the end of every week, the participants will receive a reminder from the researcher to complete reading particular chapter.</li> </ul>
Tracking	<ul style="list-style-type: none"> <li>• Each individual is responsible to report to the researcher upon completion of reading each chapters.</li> <li>• After complete reading all chapters, every participants will be required to fill in the AAQ-W questionnaire for assessment.</li> </ul>

During this session, the researcher grasp the opportunity to encourage a positive attitude toward the developed bibliotherapy module. The prototype 2 “Making Peace with Diet” was given by hand or post to all participants. All participants were briefed about the monitoring process that occur every week through online meeting with the researcher.

The formative evaluation during the implementation phase includes testing prototypes by having learners participate in the bibliotherapy module (prototype 2). The prototype 2 was implemented through a try out, which gathered users’ feedback on the practicality of the module’s design. To asses if the module met its objectives and criteria for practicality, five overweight or obese female young adults participated in a four-week self-help book program from May 2024 to June 2024.

This study evaluated the quality of the developed bibliotherapy module by analysing participants’ responses throughout the intervention. The researcher gathered information from interviews, journal writing tasks and AAQ-W questionnaire. The empirical findings are discussed in the next section.

## **6.4 EVALUATION PHASE**

### **6.4.1 Practicality of the developed bibliotherapy module (prototype 2) via user-retrospective and reactions among the overweight and obese participants**

This section answers research question 3.1 which is “What is the practicality of the book based on the user retrospective and reactions among the participants who attended the four-week self-help book (*Making peace with diet*) intervention?” This section reported whether the users among overweight and obese readers could actually use the module. It determines the practicality of the module through interview and journal entry on the use of the self-help book. The researcher wanted to know whether the participants are able to understand or comprehend the content of the book and at the same time able to complete reading all chapters. Negative feedbacks such as inability to understand or skip reading some parts of the book were followed up with further questioning to explore ways to improve the book’s design and development.

Table 6.3 Practicality of the developed self-help book (*Making peace with diet*)

<b>Themes</b>	<b>Subthemes</b>	<b>Main ideas</b>
Ability to comprehend the content of the book	Factors that facilitate participants' comprehension	<ul style="list-style-type: none"> <li>• Clear explanations of concepts with usage of analogy and examples</li> <li>• Relatability helps readers understand the concept</li> </ul>
	Factors that hinder participants' comprehension	<ul style="list-style-type: none"> <li>• Difficult concept, abstract exercise and jargon words</li> <li>• Contradiction with participant's understanding creates confusion</li> <li>• Unable to relate the activity at present with learnt skill of previous chapter</li> </ul>
Ability to read all chapters due to book-related motivating factors	Factors that motivate participants' complete read the book	<ul style="list-style-type: none"> <li>• Values, goal setting and self-monitoring</li> <li>• Relatability and addressing personal challenges</li> <li>• Information, knowledge and insight</li> <li>• Activities provided facilitate concept mastery</li> <li>• Reading experience and engagement</li> <li>• Self-improvement and change</li> </ul>
	Reasons for skipping any part of the book	<ul style="list-style-type: none"> <li>• Uneasiness of past memory remembering and avoid or stop long for reflection</li> <li>• Discomfort or unfamiliarity</li> <li>• External factors</li> </ul>
Content appreciation and suggestions for improvement	Content appreciation	<ul style="list-style-type: none"> <li>• Acknowledgment</li> <li>• Applicable for area other than eating behaviour</li> </ul>
	Suggestion to improve clarity and comprehensibility	<ul style="list-style-type: none"> <li>• Worksheet using linear design is easier to understand</li> <li>• Visualization exercise is hard to do.</li> </ul>
	Suggestion for content improvement	<ul style="list-style-type: none"> <li>• Explain more about "craving"</li> <li>• List down alternative strategies not shared in the book</li> <li>• Put information for particular phenomenon mentioned</li> <li>• Suggestion to explain "why" certain exercise not directly related to diet</li> </ul>
	Suggestion for layout design improvement	<ul style="list-style-type: none"> <li>• Show whole picture of worksheet before using the cut version on the other pages</li> <li>• Add more caricature or pictures</li> <li>• Use bold function</li> <li>• Cue the content structure</li> </ul>

#### 6.4.1.1 Ability to comprehend the content of the book

Psychoeducational materials are meant to deliver information to the users so its' content educate and assist them in making positive changes in life. The utmost important element in evaluating any psychoeducational material is to know whether the users able to understand its content. Specifically for this study, all participants positively responded that they are able to understand what they've read from the developed self-help book. Two main themes clarify the reason for good comprehension of "Making Peace with Diet" self-help book which are 1) clear explanations of concepts with usage of analogy and example and 2) relatability of content with life experience. Only some parts of the book are difficult to grasp which will be explained in this section.

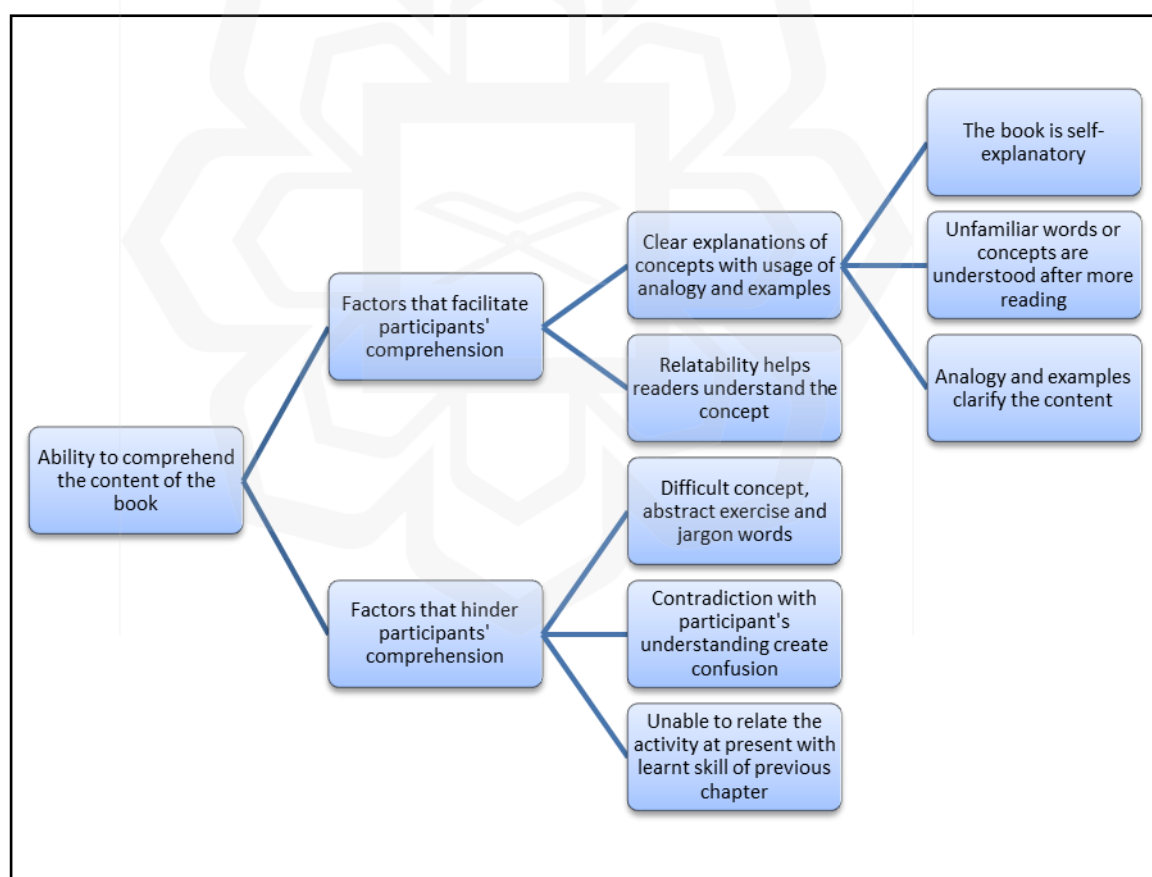


Figure 6.1 Participants' comprehension of the developed self-help book "Making peace with diet."

Firstly, the book has clear explanations of concepts with usage of analogies and example. The concept of ACT may be new to many but with clear explanations, the readers were able to understand it. This is because of its “self-explanatory” nature.

Content generally is self-explanatory. There is no like... its not hard to understand the content as a whole. (R4, DU[I] 10)

This chapter really makes me feel like somebody is talking to me. I don't know... the way that.. The words. As if there is someone talking to me. When I have queries, the next part has already answered my queries. (R5, DU[I] 220)

Even though there are unfamiliar words or concepts, after reading further, the participants were able to make sense of it.

Basically I understand the content that I read. Its just that there is one part. “Turning the passive into active”. Because there is one word. Active is for ..... “*the dead man*”. I was like “uh”. After I read it again. Ow... ok... I think I read it few times. I am trying to understand it. (R1, DU[I] 98)

I am not really remember the word. But there is one word I am not sure what it is. But I've read some of the part after that, I kind of understand the meaning. So its fine. (R2, DU[I]8)

Page 94 , ada mention, “common humanity” tu. I think my BM level lah. I was like “whats's that” , but like after... because you explain, that's helpful. (R4, DU[I] 117-119)

Analogies and examples really helped the participants to grasp abstract or new concept of the book content.

I actually understand since you give several analogy about Bob, about the “driving” to know your values and aim, something like that. It is kind of helpful because of the analogy. (R3, DU[I] 12)

In my opinion I can fully understand it really good. Because due to the analogy that you give, the simple words that you give, I think, to understand the content is, really understandable. (R5, DU[I] 81)

Other than clear explanation, secondly, the participant able to understand the content of the book due to its relativity. Participant R4 acknowledged that the situation or examples given in the book are really relatable to hers and this helps her understand the book message. Participant R1 also expressed in her journal how the story of Nurul really relates to her.

And I find mostly the situations in those chapters are very relatable. And in a good way it attacks me as well. Because like for the part like “owh, we have all this information about ingredients of the food. How bad it is but, how many times that we know the ingredients of rice, but we still take four bowls of rice to eat”. I was.. yeah.. so most of it, it’s the situation the example is relatable to what I am experiencing. So I could understand the context even better. (R4, DU[I] 12)

Reading Nurul’s story in Chapter 1, it reminded me of myself. Although not completely, but I remember how much I wanted to hide from others. It was fully due to my confidence. I was afraid to speak up because I am afraid that I would be wrong and people’s opinion on me does matter a lot to me. That was me. Many years ago. It has been 10 years. Now, when I am reading this book, it made me realise how much I miss out during my secondary school days. I don’t know myself enough. I don’t know what triggers me or what makes me feel good about myself. (R1, DU[J] 5)

While all participants able to comprehend the content of the book in general, there are still some parts of the book that needs improvement. Two participants namely R2 and R4 experienced a little difficulty in understanding some specific part of the book.

Firstly, difficult concept, abstract exercise and jargon words are not fully understood. Participant R2 is the only one who unable to understand the “self-as-observer” concept (chapter 4 of *Making peace with diet*). Participant R4 on the other hand unable to understand one particular question that seems so abstract to her.

Owh there is one part where I can’t seem to understand as much. It’s about “*The observer self*” I cant seem to visualize it. (R2, DU[I] 85-89).

Activity the next day. Like “*How old is the emotion*” tu. I was confuse a bit either like, how long has the emotion been there. Or like, how old I was when the emotion was there. Ha macam tu. I was confused about the question. (R4, DU[I] 259-261)

Both participants R2 and R4 had also emphasize about jargon words that affect their comprehension of book content.

There is this one part that I can't understand the sentence at all. But it is for the practices. So it does not affect much. Page 146 (referring to word "effectiveness"). I tried to re-read it. But I still cannot undersand it. (R2, DU[I] 191-193)

If I didn't know any scientific words, for example like "insulin", it was mentioned some.. *kerintangan insulin*. I was struggling with that. I think it is insulin resistance. (R4, DU[I] 72)

The second theme that hinder participants' comprehension is contradiction with her understanding create confusion. There is one part of the book that invites the reader to reflect. The paragraph after that exercise predicts that some of the readers might have negative thoughts or emotion. Thus, that paragraph intends to process those having negative thoughts and feeling. However, those readers who do not have negative feelings or thoughts might be confused with such statement.

When I pen down, what I thoughts, but for your information my comment was positive. After that (the paragraph after reflection space in the book says : ) "Perhaps there are thoughts saying I am unworthy of being loved". Oh I realize, am I supposed to comment negatively? The reflection should be written positively or negatively? (R4, DU[I] 125)

Lastly, even though the author tried hard not to completely compartmentalize or segment each chapter by linking the previous chapter with the next, there are still some parts of the book that require improvement. Without proper flow or connection from one skill to other, the book reader might find it hard to practise the skill as a whole. Participant R4 complaint that she was not able to relate the activity at present read chapter with learnt skill of previous chapter.

The day 16 activity. I would want to know what should I do after that. Should I take the food or not. Its like, "thank you mind" that sort. Its helpful. Its just that, what should I do after that .. Its like, it does not mention anything. Should I not take or... should I take the sweet ... (R4, DU[I] 381-385)

When the participants were asked what they understand from each chapter, all gives answers that prove the book is easy to understand as they able to grasp the content. Table 6.4 presents the themes for what the participants understand from each chapter. All answers matches with the content of the chapters.

Table 6.4 Themes Understood by Participants from Each Chapter

No.	Content of chapter	Themes for what the participants understand from each chapter
1	Chapter 1,2 & 3 <ul style="list-style-type: none"> <li>• Experiential avoidance</li> <li>• Valued living</li> <li>• Psychological flexibility</li> </ul>	<ul style="list-style-type: none"> <li>• Avoidance and acceptance</li> <li>• Clear purpose, values and motivation</li> <li>• Process and strategy</li> <li>• Emotion and thought management</li> </ul>
2	Chapter 4 <ul style="list-style-type: none"> <li>• Contact with present moment</li> <li>• The observer self</li> </ul>	<ul style="list-style-type: none"> <li>• Mindfulness, awareness or being conscious</li> <li>• Kindness and self-compassion</li> <li>• Self-criticism and stigma</li> <li>• Conscious decision making</li> </ul>
3	Chapter 5 <ul style="list-style-type: none"> <li>• Clarification of values</li> <li>• Committed action</li> </ul>	<ul style="list-style-type: none"> <li>• Values and motivation</li> <li>• Contextual behaviour and acceptance</li> <li>• Goals and commitment</li> </ul>
4	Chapter 6 <ul style="list-style-type: none"> <li>• Cognitive defusion</li> <li>• Acceptance</li> </ul>	<ul style="list-style-type: none"> <li>• Mind and thought processes</li> <li>• Acceptance and emotional management</li> </ul>
5	Chapter 7 <ul style="list-style-type: none"> <li>• Summary of psychological flexibility</li> <li>• Overcoming barriers</li> <li>• Self-monitoring</li> <li>• Problem solving skill (relapse management)</li> </ul>	<ul style="list-style-type: none"> <li>• Summary of psychological flexibility</li> <li>• Overcoming barriers and obstacles</li> <li>• Self-monitoring</li> </ul>

#### 6.4.1.2 Ability to read all chapters due to book-related motivating factors

When asked about scale of motivation to complete reading the chapters, the participants rate ranges from 6 to 9.

Table 6.5 Scale of motivation to complete reading the chapters

Participants	Motivation to complete reading the chapter using scale 1-10. 1- No motivation 10 – Highly motivated					Mean
	Chapter 1-3 (Introduction to valued living and ACT)	Chapter 4 (Contact with present moment and self-as-context)	Chapter 5 (Clarification of values and committed action)	Chapter 6 (Cognitive defusion and acceptance)	Chapter 7 (Summary, relapse management and conclusion)	
R1	7	8	7	7	8	7.4
R2	8	6	7.5	5	7	6.7
R3	7.5	7.5	7.5	9	8	7.9
R4	9	9.5	8.5	8.5	8.5	8.8
R5	7	8	8	8	8	7.8

Further exploration described book factors that motivate participants to complete reading the chapters. Six main themes emerged as illustrated in figure 6.4.

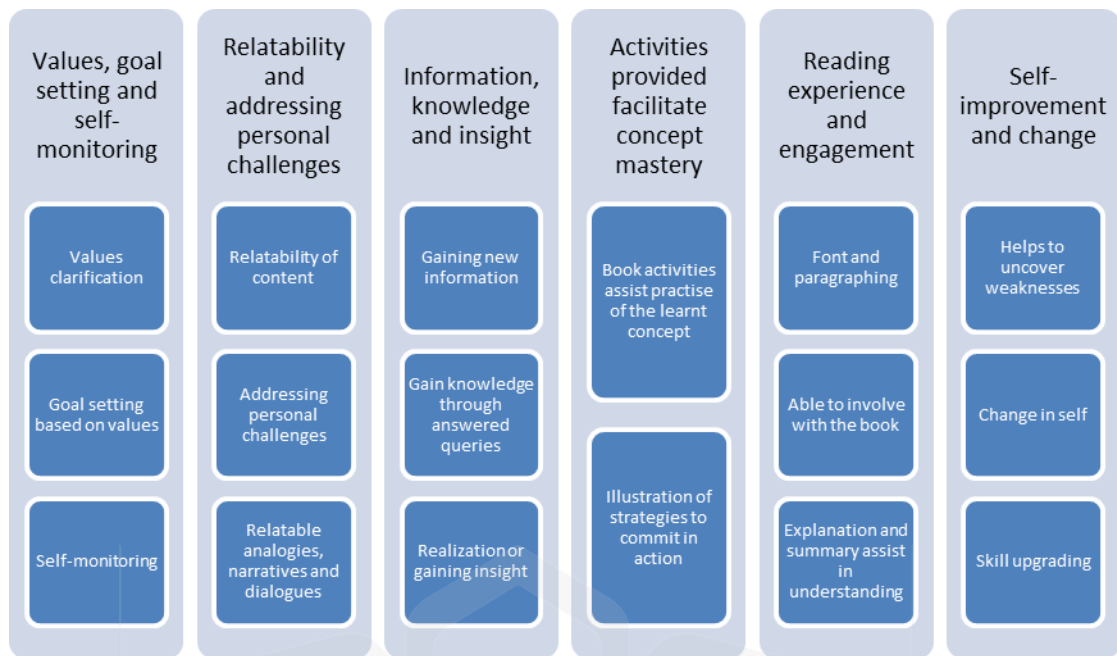


Figure 6.2 Factors Motivating Reading Completion Among Intervention Participants

The first theme is values, goal setting and self-monitoring. Participant R1 and R3 emphasize values as the element that they really like.

The strength of the book is more towards the value. Like I could get value out of the book. Which is equivalent to benefit lah. (R1, DU[I] 24)

It emphasize about value. Something that I really like. (R3, DU[I] 26)

Setting a goal guided by clear values also motivate the participants to complete reading the chapters.

Because there is one part. I think in the reflection it says, something like list down what do you want , what kind of .. is it values or I think is it what I want to achieve and make it, in a timeline. Not a timeline, but make it in a nice diagram so that I can know what I want to achieve and what value I am gonna get. It gives me motivation lah. (R1, DU[I] 120)

I need to do something to cut my sugar intake.. but i have an urge to cut my carbs also..I realise my value right now is to be healthy for a long time and I know with being healthy my appearance also would change .. so yeah.. I think I found my value right now.. I'm quite relieve that I've found my value. (R3, DU[J] 11)

I think it, because there is like activities that make me explain lah, actually what are your values, what are your eating habits, the simple eating habits. Like start from small. I don't remember which. But *yah*, think about eating habit that we want to change. (R4, DU[I] 182)

Realising the importance of monitoring self, participant R3, R4 and R5 mentioned that the information and practises provided from the book helps them to monitor themselves.

Throughout the journey, there is challenges to commit and how to supervise [monitor myself], that's the reason why I motivate to read this *lah*. (R3, DU[I] 286)

So like actually doing things *macam tu*. So *macam* few strategies on how to monitor yourself. (R4, DU[I] 427)

It gave ways and strategies how to observe ourselves from break the diet, break the habit. (R5, DU[I] 403)

Second theme that motivated the participants to complete reading the book is relatability and addressing personal challenges. The relatability of content, addressing personal challenges, and components of analogies, narratives, and dialogues ignite readers' interest in finishing the book.

Participant R2, R4 and R5 can relate the content of the book with what they had been facing in real life.

In general, I think its more relatable. And I think its kind a like someone relate it with my own life. Cause mostly its about me. But in someone's else POV. (R2, DU[I] 2)

I feel like most of it is because personal experience. Because that is what I am facing day to day basis. I am still on a diet. Active. Not on and off. Like everyday. And this is my daily struggle. So *yah*. That's why the topic motivates me a lot lah to finish it. Because due to my personal struggle and personal diet that I am currently doing right now. (R4, DU[I] 97)

I think, the thing that makes me want to read further is the relatableness. I think. If you give me something I cannot relate, I think I don't have motivation to read (R5, DU[I] 125-127)

Chapter 4 really captures the universal feeling of being overweight, and I really liked it. I'm feeling happy because I found a sense of belonging by reading about others who share the same struggles, stories, and thoughts about eating. However, I still have doubts about whether I can achieve an ideal healthy life. On one hand, I feel happy and connected, but on the other, I am sad and questioning my ability to succeed. I am looking forward to the next chapter, hoping that it will continue to inspire me and help me improve. (R5, DU[J] 9)

Participant R3 and R4 sense that the book address their personal challenges such as weight cycling and emotional eating. Thus, they are motivated to read the book.

And then it also touched about , sometimes people already get their ideal weight. But somehow turn back to their original weight before the diet. So that, I mean, try to figure out. That's why this book really motivate me to read about that. (R3, DU[I] 26)

This topic of emotion and psychology tu, it .. I have the biggest struggle in handling emotion. Psychologically. I have spychological struggle lah. So its close to my heart lah this topic. To be honest, emotion is what I struggle the most. Like number one punya struggle. So that's why it motivated more. Just because it relates to me the most.(R4, DU[I] 277)

The written analogies, narratives and counsellor-client dialogues are also helpful for the participants to gain insight.

Because of ... I think I love to read the others experiences. Other people experiences. (R2, DU[I] 111)

It actually pretty engaging lah. Because of the analogy , something like that. (R3, DU[I] 42)

I really like you gives many case study [analogies]. Its ... when you give dialogue about the person, the client and the counsellor, it really make, I am the person who is informing the counsellor and the counsellor is answering what's in my mind. (R5, DU[I] 232)

The third theme that motivated the participants to complete reading the book is information, knowledge and insight. Gaining new information, revisit known information, gaining knowledge through answered queries and realization or gaining insight makes the participants interested to keep reading the book.

Participant R2 appreciated the new information she got from the book. Participant R3, on the other hand, gained a realisation of the importance of mindfulness, a known skill that she had forgotten.

It provides me new information and new things about life. Therefore it makes me motivated to know what I get to know further. Like in terms of this part of, this chapter specifically, I get to learn something new. Therefore with that new information, I think if I further read this part or this chapter, I get to know more. So that's the fun. (R2, DU[I] 213)

Its fascinating how I can use the techniques for life in general. It amazes me how I get to learn new things daily by reading. I can't wait to learn more new things from reading the book. (R2, DU[J] 10)

It taught about mindfulness. It really something that I forget. Especially mindfulness, something that I think children always do. Because they pretend experience. So they really mindful about what or something happened surrounding them. So that is why it motivates me to learn it again, something like that. (R3, DU[I] 71)

I am feeling happy and more determined after reading Chapter 5. This is because I learned many new things, especially about the passive and active actions that can lead someone to be healthier. It's like deciding whether or not we want to take action. (R5, DU[J] 12)

Participant R3 and R5 notice that each time they have some questions about what they are reading, the next part will provide answers to their queries. This satisfy their thirst for knowledge and thus motivate them to further read.

You explain what action, why she chose it. And then you immediately gives another story. You explain it with another story. About Shahrul. So actually , I mean , my question is like the same like Nurul. My situation is like Nurul. The conversation with counsellor is the same. And then I have some question. The thing that Shahrul question to the counsellor is same like mine. I think that's why it makes me want to read more. (R3, DU[I] 160)

Like I mention before this. Like everything , macam previously in chapter 4, 3, there is something that I questioned. And I cannot find the answer. But in chapter 5, all my answers.. sometimes when we read something, we ask. What kind of situation, what example that lead to that person may have not enough motivation. There is, there are people who don't have values. But next page , next exercise tu, it explains. There are people like this. (R5, DU[I] 232)

Self-discovery through realization or gaining insight is also positive experience among the participants that motivated them to read more.

We always think “ok, what we think is always correct, something like that”. So yah, I want to learn it more deeper, something like that. So I can understand more about my mind and how to handle it. (R3, DU[I] 225)

Sometimes we face , we will face in situation where we trap inside our mind. Like... not our mind, literally. Like you mention inside the chapter. Sometimes we get trap in words like “ok, we take sugar, we drink something sweet because people, maybe treat us. So we just keep the day to maintain health , keep healthy”. (R5, DU[I] 306)

The fourth theme that motivated the participants to complete reading the book is its activities facilitate concept mastery. The content of the book include articles, anecdotes and activities of many forms. The activities especially assist practise of the learnt concept and illustrate strategies to commit in action.

Most of the participants appreciate the activities or exercises that are presented after the concept explanation.

The strength of the book it goes to get the practise part. It allows me to you know, laid back what can I do. (R1, DU[I] 279)

Before I read the chapter 7, I kinda have a question regarding what if , what is questions. But after I read the whole thing, and then there are part where in this book that mention tips or something that can put us in consistency. Like being consistent in doing that , so I kinda like, like it. because it gives so much example how to do it and all. I get to understand that even though we are unable to do it perfectly, it is actually normal for human beings. Because not everyone is perfect (R2, DU[I] 353-357)

I feel like the many activities. I think like the activities are the most helpful for me. Because I didn't , just because I didn't know I needed to do this activity to reach a certain level of awareness. Or to like even be aware that , owh that is what I've thought before. (R4, DU[I] 99)

I think the strength of the book is by using , providing us the activity<sup>lah</sup>. The thing we need to do. If you don't provide the activity, it did not, it will not affect my motivation. It become 6 or 5. Or maybe maintain at 4. But by using the activity, it gives a sense of self-reflection (R5, DU[I] 32)

Through activities or exercises, the author illustrates strategies to help the readers commit in action. This clear strategies on how to be committed in action motivate the participants to read the book.

And then like what makes me more motivated is because at the end, there is like strategies... specifically the SMART , like how can we like move on from now. Like using our values and motivation. So that is why, that makes me more motivated. As like I can know how to tackle the habits for example. The bad habits. (R4, DU[I] 182)

It shows to me and illustrate me how the situation that I always face. When I want to keep healthy. For example, when people want to treat me sweet drink, even though that day, I want to cut sugar, I don't want to eat sugary food, I don't want to eat fast food. But things like that, are keep going. And then we trap with our thoughts that maybe, "its ok to drink it". Maybe "this is for today." Or "We need to .. we need to drink it, its ok. We share it with our friends." But it s wrong. We trap with that thoughts. So because of that, I think, that is 2 strength for this chapter lah. (R5, DU[I] 306)

The fifth theme that motivated participants to complete reading the book is reading experience and engagement. Nice font, appropriate paragraphing, able to involve with the book and good summary of the whole concept gives positive experience to the participants' reading experience.

Participants R2, R3 and R5 felt at ease to read the sentences with big font and short paragraph.

By the way I like the font. I think its bigger and make me easy to read. And also because the size it makes me motivate to read because the size is bigger than usual one. Like the usual novel type. So its fine. Because some font, they really like the small one. And it does not really motivate me to read. Because in one page it just makes me think, owh there is so much to read. (R2, DU[I] 20-26)

Since the paragraph also already short. I mean easy to read. That's why. Its pretty easy to follow (R3, DU[I] 32-34)

Its really fun to read. I cannot wait to read another chapter. Yes. and then, I don't know, the font of the book, but previously (other book) I think, one page there is so many words. But for this book, its *oklah*. (R5, DU[I] 52)

Participant R1 really enjoyed that she managed to get involved with the book.

Like... its because this chapter is more ... I have to accept it within myself. Its like my body, my eyes, my nose everything. In a way it makes me feel, I am involve with the book. Its just that, I am involve.(R1, DU[I] 64)

Upon reading Chapter 4, I learnt awareness technique through body sensation. I never realised that by feeling my body sensation, I can feel the 'present'. All these while, I thought that feeling the present is to just put my mind away from distraction and go with the flow. When I connect every sensory organ, I learnt self-control. For instance, I always want to satisfy my cravings whenever possible. If I didnt, I will feel so bad and I need to fix this. I feel good reading this chapter with the exposures that I gained, I am able to discover more about myself. With the techniques and strategies that I gained from Chapter 4, I hope to learn on how to accept and improve on my cravings. (R1, DU[J] 7)

Participant R3 and R4 appreciated the clear explanation and summary of concepts which assist them in better understanding.

Because of personal factor kut. Like the ..ok the book itself generally very well explained. (R4, DU[I] 277)

Summarization of the previous chapter as you will see the , you know, the journey throughtout the journey, that's one part. (R3, DU[I] 286)

The last theme that motivated the participants to complete reading the chapters is self-improvement and change. Participant R4 noticed that the book helps her to uncover her weaknesses so she can improve herself.

I think it, because there is like activities that make me explain lah, actually what are your values, what are your eating habits, the simple eating habits. Like start from small . I don't remember which. But yah, think about eating habit that we want to change. Something..so like, it uncovers all my weaknesses that I havent given much time thinking about it before. (R4, DU[I] 182)

Participant R5 noticed changes in herself.

Honestly, I want read the next chapter, because I can feel a little bit of changes in myself. Like I start to thinking about how many rice that I take. Like seriously this is not lie. I don't take, I just ok , up till five scoop I take the rice. But now, I only take half. That become naturally. Because I imagine myself. And then I *macam tu lah*...like it really interesting. Its just that, I found it hard to cut sugar due to addiction. But for rice and vegetables, I have reduce the portion and increase the portion. To the extent my roommate notice and said "Uish, you've eaten vegetables now." (R5 , DU[I] 199-201)

She also perceived that she can improve her skill specifically in terms of modifying eating behaviour.

To be honest, I think, around 7 lah because previously on scale 4-3 because I don't think it is important. But the book really upgrading my skill. I believe if I read more and more, I think the motivation scale will go up. (R5, DU[I] 26)

While most participants were motivatad to complete reading the book, there are still some minor parts of the book being skipped. Participant R1 and R5 read all chapters completely without skipping any. Participant R2, R3 and R4 had skipped some parts of the chapters. The reasons will be explained further in this subsection.

Table 6.6 Completeness in reading the chapters among participants of self-help book program

No	Participants	Complete reading the content of the book?				
		Chapr 1-3	Chapter 4	Chapter 5	Chapter 6	Chapter 7
1	R1	Yes	Yes	Yes	Yes	Yes
2	R2	No	No	Yes	Yes	Yes
3	R3	Yes	No	No	Yes	Yes
4	R4	No	No	Yes	Yes	Yes
5	R5	Yes	Yes	Yes	Yes	Yes

Firstly, some parts of the chapters are skipped due to feeling uneasiness of recalling past memories and the desire to avoid prolonged reflection. Participants R2 and R4 for example, unable and reluctant to remember childhood memory.

Owh there is also part where they want us to tell about what weve been through during remaja or like teen and also during childhood. And that part, I skipped it because I don't rememebr the detail as much. (R2, DU[I] 105)

(refer to) page 78. Because like... to remember memories of two experiences, high school and primary school, right. But for me personally, I have the worst memory in high school. And because I was bullied. So it was a bit triggering for me. But its not that harmful. But it was like triggering for me, I skip the page. (R4, DU[I] 91-93)

For participant R3, she skipped doing the activity because it is about reflecting the past.

Because it actually... Here it mentioned about we need to reflect back how we eat previous day. *Hari* 1-2. I did not have much time to do it since I read it... because I read it in monorel.(R3, DU[I] 65)

Secondly, the participants skipped some parts of the chapters due to discomfort or unfamiliarity. Participant R2 skipped doing the activity because of discomfort in jotting down on the book.

Because I didn't really jot down anything from the book. Like directly on the book. Therefore I think its hard for me to do the table itself. I am the type I don't really jot down on the book.(R2, DU[I] 32-34)

She also skipped reading the table that summarizes a part of the chapter because the format of the table does not follow the usual format. This unfamiliarity created confusion.

I don't really understand the table part. But then I did try to understand and make sense of it. I am not sure if , this will make sense for some people. Because as for me its better just to put it *bilangan* a the first column. And then make it fleksibel and then not flexible. (R2, DU[I] 14-18)

Lastly, some participant skipped reading or doing the activity due to external factors. For example, participant R3 skipped doing the activity due to being sleepy and participant R4 skipped the summary because she already understand that part which was explained previous page.

Because I am quite sleepy. I just remember that I need to read this part. And then I read it and then I sense "Oklah, just go to sleep, sleepy.". (R3, DU[I] 154)

Except the tables at the end. Like the fleksibel psychology I just skim throughout it. Because there are a lot of numbers and rows. That's when I tend to like, only skip through. Because I already understood the first part, second part. (R2, DU[I] 14-18)

#### ***6.4.1.3 Acknowledgment and suggestions for improvement***

In terms of area of improvement, three themes emerged which are suggestion to improve clarity and comprehensibility, suggestion for content improvement and suggestion for layout design improvement. Other than suggestion for improvement, the participants give acknowledgment as the book is helpful and beneficial for their journey of modifying eating behaviour. Figure 6.7 illustrates the four themes that emerged as additional feedbacks for evaluating prototype 2 "*Making peace with diet*" self-help book.

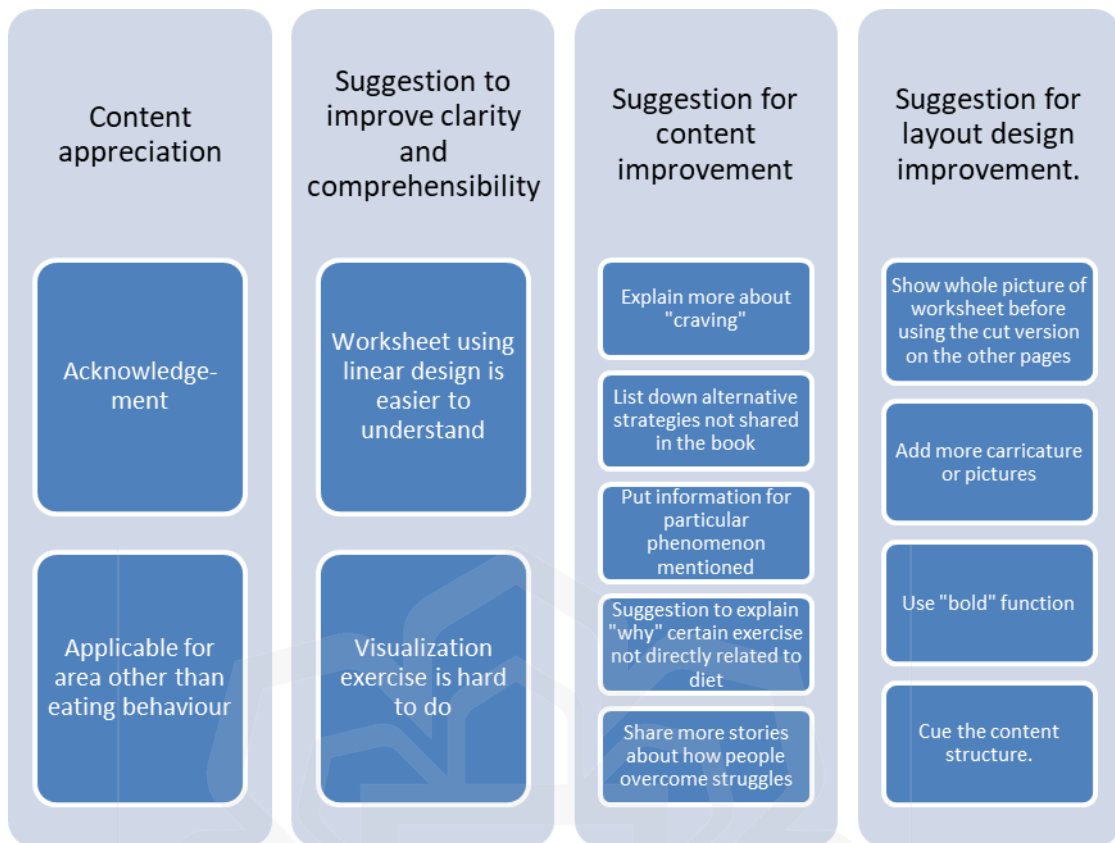


Figure 6.3 Themes of additional feedbacks for evaluating prototype “*Making peace with diet*”

The first theme is content appreciation. Participant R1, R3 and R5 acknowledged that the book is good, engaging and can serve as reminder if one fall off from the right track.

So far all so good. I like the context of the book. Its nice so far. Its very helpful. Thank you for writing the book. (R1, DU[I] 301)

It actually pretty engaging lah. Because of the analogy , something like that. plus with relatable content. (R3, DU[I] 42)

When I want to do something that is impulsive for instant like when I want to eat something, I would sometimes look at the book and then I remember the chapter said about values. Chapter three if I am not mistaken, ACT. So it’s really beneficial-lah. (R5, DU[I] 10)

Participant R2 and R3 also appreciate the content that can be applied for area other than eating behaviour. Participant R2 had been practising the skills for other part of life while participant R3 acknowledged that the content helps her overcome her fear in doing final year project.

In terms of life, I actually did the activity based on what I feel. Not, technically not about eating behaviour at all. So like mostly, I did the practices with what I find part in my life. So it kind of like relevant to another or other things as well... not just eating behaviour. (R2, DU[I] 215)

Because it's not. I mean. When I read this, it's not like resonate my eating behaviour only. But my life actually. My life in a whole way. Especially now I am currently doing my FYP. So the things like I am afraid doing this, I am afraid doing that. Because it completely, you know get out of my comfort zone. But when I read this, I need to make a "home" of this, you know, afraid of doing something new. And something like that. So it actually resonate with my whole life. It's not about my eating behaviour. (R3, DU[I] 324)

The second theme is suggestion to improve clarity and comprehensibility. Participant R2 complaint that she found it hard to utilize one of the worksheet which is "*hierarki nilai-tindakan*".

First,there is this one part where, I cannot understand the worksheet. (referring tok value-action hierarchy). I find its hard to understand. (R2, DU[I] 369-371)

The worksheet is actually a one page summary of previous page guided questions. She was able to follow the guide from the previous page but stuck to jot it down in the worksheet. Thus, it is suggested that psychoeducational material adopt linear design of worksheet instead of jumbled up numbering which can be made sense only if the helping professional is available with the client (e.g in counselling session). Without the presence of helping professional, linear design is easier to understand.

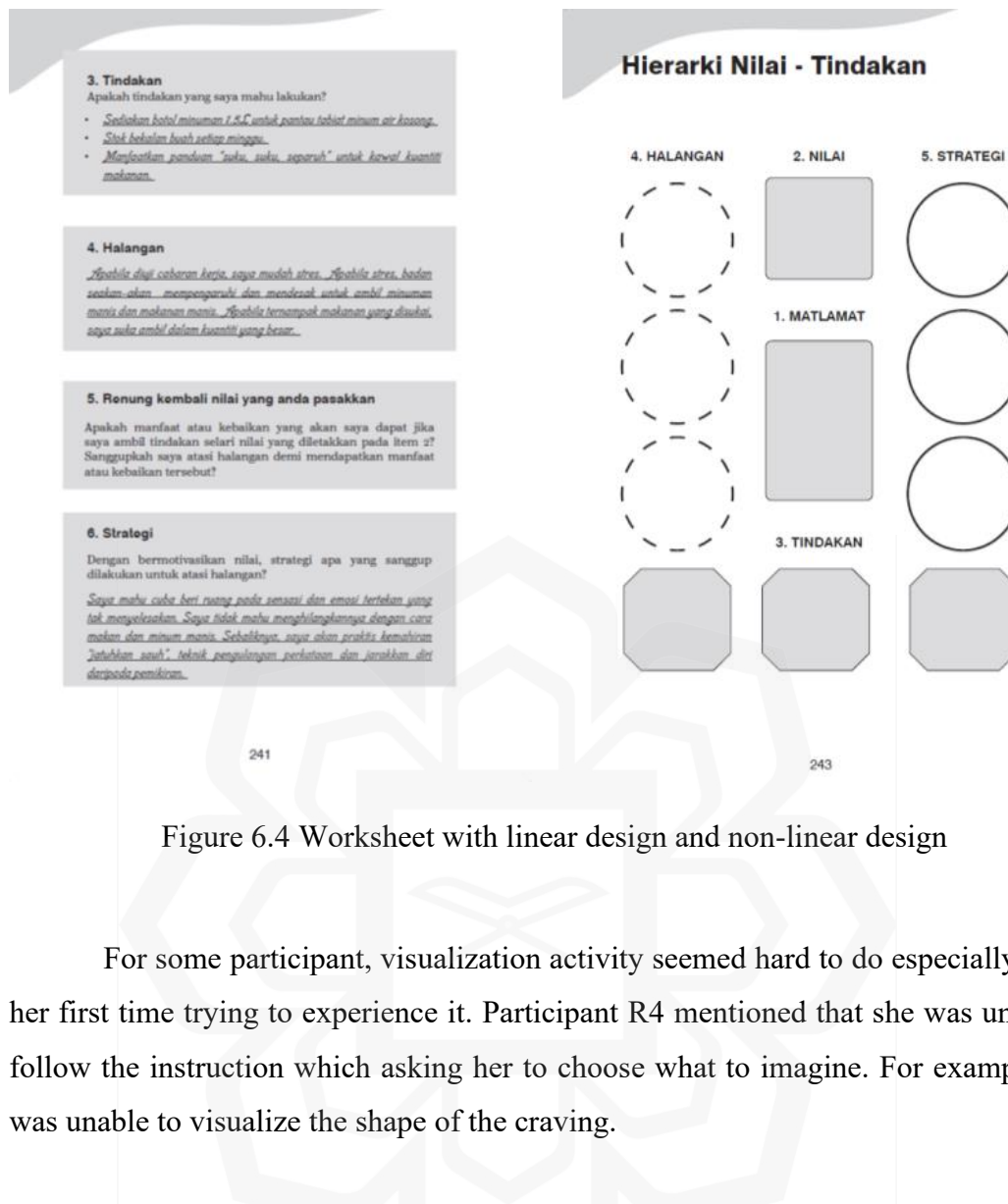


Figure 6.4 Worksheet with linear design and non-linear design

For some participant, visualization activity seemed hard to do especially if it is her first time trying to experience it. Participant R4 mentioned that she was unable to follow the instruction which asking her to choose what to imagine. For example, she was unable to visualize the shape of the craving.

This one. I think, this is the... the hari 18 punya praktis hari ni. I was .. because like it involves a lot of vialization. When I was not used to. Its not that I don't think this is hard. It's just hard for me personally because I have never did this visualization. So like when it ask me to imagine, like which part of body that felt the craving, *kan*. So I feel, I struggled because I never, I never, it either like I don't know or I was never aware if it ever came to any part of my body. *Macam* when I crave, I just crave due to hungry. So I feel like I fail doing this activity. Am I doing it right? If I for example, from the chest. So to imagine the shape like shape either its surface is soft or like sharp. I struggle.. Because I don't know the correct answer for me personally.. I think it would be helpful for me because I never visualize *kan*, so I think it would be more helpful if you give the instruction directly. For example, imagine craving is circular. Then, do the activity. I think, that's more, I am more familiar with that way. (R4, DU[I] 249-257)

For this particular exercise, it is suggested that instead of asking the reader to choose and imagine themselves, alternatively, direct instruction like “imagine craving is circular” is easier for reader to follow.

The third theme is suggestion for content improvement. It is suggested for the author to include information about relevant topic such as the science of craving. Participant R4 particularly interested to know about craving since it is her biggest struggle in changing eating behaviour.

Its helpful to explain some scientific word. Like what is insulin resistance. What is craving. Why did craving happen something like that. But to explain why craving, I would, it would be helpful for me, like when you explain about craving in chapter 1, I want to know why craving happen like to comfort myself, to motivate me, I need to hear the word “its ok to have craving” how long does craving work for a person like if it is normal, how long it will last until you get used to it. (R4, DU[I] 74)

Participant R4 also suggested to put information such as terminology for particular phenomenon mentioned so whoever interested among the readers able to look it up further.

Page 185-187. I notice... its because I am very interested with this “kopikopikopi” method. (There is one part where) the counsellor and the client do the activity *kan. Aaaa. Yah..* About symbol that we gave meaning. Its because, I am the kind of person who like informative things. That I can learn. So it would be helpful for me personally if it was stated what phenomenon. For example, giving... if I say “coffee” then what my mind will automatically think, what is that phenomenon? But what I learnt in uni, the name is classical conditioning? Where if we say something, will think something, automatic something else. Because if I don’t know that term, I don’t think, I would understand deeply. Haah. So for example if I didn’t know and I saw the word “conditioning”, so I can research more into it. (R4, DU[I] 365-369)

Most of the time, an element of psychological flexibility has many methods. Since only selected methods are shared in the book, providing the list of alternative strategies can help the reader to explore further.

Owh, I think chapter 7, Because just now I relate that visualization doesn't work. I would appreciate if the author would list down alternative strategies. For example, strategy like journalling, some people don't like journalling, what alternative that we can do. To explore more. Because maybe journaling is not the best way that I can explore. Maybe other ways works better. Like list of, maybe no need in details. Maybe just a list. So they can further look into it if it (the one shared in the book) doesn't work. (R4, DU[I] 457-461)

There are also introductory exercise that is not related to eating behaviour. Thus, participant R4 suggested to explain "why" certain exercise is not directly related to diet. This helps to motivate reader to do the activity.

For example, when I was doing the first day, page 66. Like because the activities most of the activities are... the some part, yes, the exercise, not directly to our contact with food. So the first day like, I have to face myself in the mirror. Firstly I question "owh what is this for?" But only after when I going through the intro, this is for increasing my awareness. I think it would be helpful if for example, the exercise is not directly contact dengan food kan, it would be helpful if you explain what this activity achieve. How does it affect later on. During the diet itself. Like what is the goal. Its not that this is stupid, why I need to do. No. But I want to know how this will affect later on when I start dieting. (R4, DU[I] 107-109).

Participant R5 suggested to share more stories about how people overcome their struggles. She found it interesting to know other people's experience.

Maybe if you share more story about how to overcome obstacles,I think, that's more interesting to me. Because I like to read how people deal with obstacles they faced. (R5, DU[I] 407)

The last theme is suggestion for layout design improvement. Four suggestions are 1) Show whole picture of a worksheet before using the cut version on the other pages; 2) add more caricature or pictures; 3) optimize usage of bold function and 4) cue the content structure.

If there is a challenge to fit a complete worksheet in one page, it is suggested that the author introduces the whole worksheet first before using the cut version or half version on the other pages. This is to avoid confusion among the readers who could not make sense the non-continuous numbering.

For this one, I do understand but I am not sure why it was divided. Should I just say the pages? In page 135 and 137. Well because, it use numbering. So, it's kind of weird for the pages 137. It start from number 1 and then skip to number 5. (R2, DU[I] 179-183)

For like page 135 I understand like 1,2,3,4, its just that I was like is there a mistake in number. Like *pencetus* is 1, tiba-tiba number 5. But then when I read again like until page 139, I was like ok. Its because its like the whole chart is like it.. yeah at first I didn't understand in the first place but at the end...it would be helpful maybe if the whole map is in the front. Yeah. And then. ...followed by the two. (R4, DU[I] 190)

Participant R3 preferred the book to have more caricature or pictures as it helps her understand the message that the book is trying to convey.

I am a visual person. So I love something like caricature. I mean visual about the food or other picture is also good. I mean to enhance the readers. (R3, DU[I] 36)

Both participant R3 and R4 noticed that they seemed to missed some important information if it is not highlighted. Thus, bold function is useful for this purpose.

But I hope there will be I mean, I actually think analogy in this book is pretty interesting. It relate it, it makes me understand what you try to, you know convey to the readers. So could you please makes it. Its better if you bold the starting of the analogy. I mean, if all the analogy is bold, I mean the word can be bold, so because you analogy is interesting. So if you bold it, then people will you know. (R3, DU[I] 103-113)

I was just reading "trapped with the mind", I didn't know it was TEAM, because I think it was not highlighted. So when I see ada TEAM. Sepatutnya macam ABCD. Owuh rupanya macam starting from the in front..So its like haah... minor things. (R4, DU[I] 413)

It is also important for the author to cue the content structure. The book is divided into two parts. One is related to Acceptance and Commitment Therapy and the other is special topics which serve as additional input to assist readers in clarifying their values and planning their commitment. Hence, it is advisable for the author to cue the reader and letting them know which section they are now so that they don't feel abrupt ending once they reach the special topics part.

I think it would be better you put a graph. I mean like the journey line. Do you understand? Its like, it summarize all of the previous chapter, if we are on that journey, we know we have reach the end. Do you understand? Because after this are special topics right? in which the content complement with the previous chapter. But for this, it's the end. So let people know that we are at the end here. (R3, DU[I] 288-294)

#### **6.4.2 Effectiveness of the developed bibliotherapy module (prototype 2)**

This section answers research question 3.2 which is “To what extent does the implementation of self-help book (*Making peace with diet*) improve participants' state of psychological flexibility to sustain healthy eating behaviour change?”

The effectiveness of a module is determined by the extent to which the user achieves the module's objectives. A module is said to be effective if the outcomes are consistent with the intended aims. Two types of data are presented here : (1) AAQ-W result of pre- and post-intervention and (2) perceived effectiveness of the module based on findings from the interviews. Two types of changes were explored which are outcome change and process change. Outcome change is referring to knowledge of psychological flexibility and practise of healthy eating behaviour. Table 6.7 lists the questions that guided the evaluation of module's effectiveness in terms of outcome change and process change.

Table 6.7 Questions Used to Evaluate the Module's Effectiveness

No.	ACT component	Effectiveness of module in terms of outcome change (improved knowledge on psychological flexibility)	Effectiveness of module in terms of process change (improved psychological flexibility)
1	Contact with present moment	What do you know about being present?	How do you see yourself in terms of making mindful eating decision?
2	Self-as-observer / Self compassion	What do you understand about observing self?	How do you see yourself in terms of treating self with kindness?
3	Values clarification and committed action	What do you understand about values?	<ul style="list-style-type: none"> <li>• How do you make decision on what to eat at each meal time?</li> <li>• Anything have changed in terms of you putting commitment in pursuing your goal, after reading the book?</li> </ul>
4	Cognitive defusion	What do you understand about putting a distant with thoughts?	What challenging thoughts that get in the way of meeting your goals? What did you do when such thoughts occur?
5	Acceptance	What do you understand about willingness of experiencing internal discomfort such as emotions or sensations?	How willing are you (in a scale of 1-5) to experience uncomfortable emotional and physical sensations in your efforts to achieve this goal?

**6.4.2.1 Participants' Psychological flexibility level based on AAQ-W of pre- and post-intervention**

This study intends to see whether the self-help book able to improve the participants' psychological flexibility as evidenced by reduced score of AAQ-W in post-intervention. Lower score of AAQ-W indicates less experiential avoidance and more psychological flexibility. Table 6.8 shows that all participants' score are reduced after the intervention. The range of reduction score is 9-71 and the mean is 34.

Table 6.8 Result of AAQ-W among Participants Before and After Reading “*Making peace with diet*” self-help book

Participants	AAQ-W score		Difference
	Pre-intervention	Post-intervention	
R1	99	90	- 9
R2	112	99	-13
R3	96	52	- 44
R4	128	94	- 34
R5	121	50	- 71

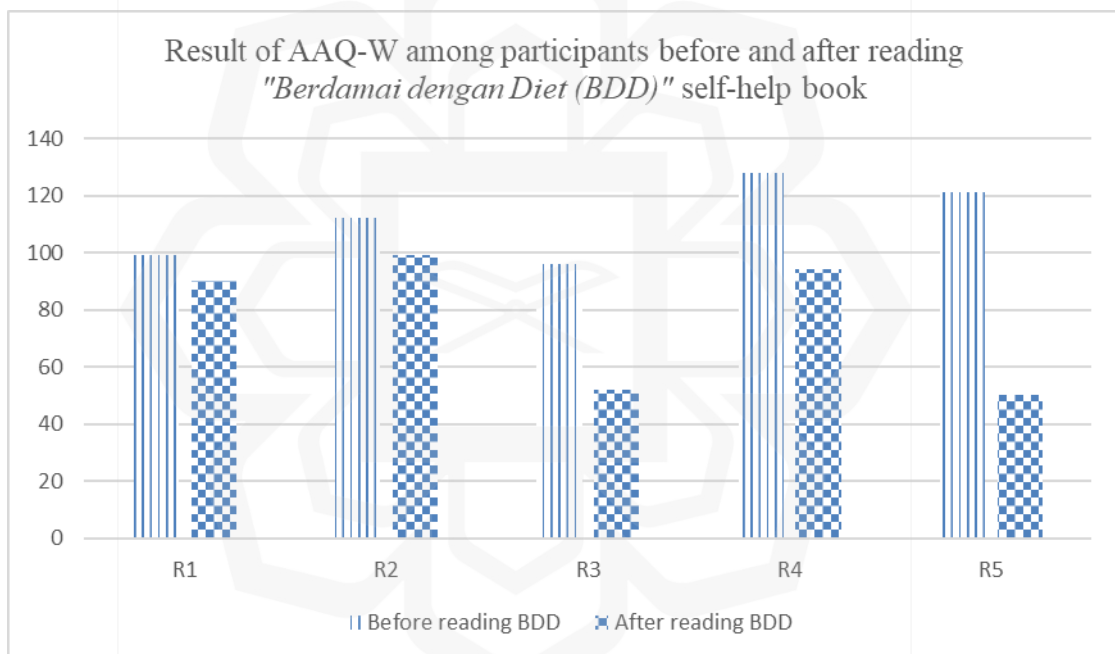


Figure 6.5 Result of AAQ-W among Participants Before and After Reading “*Making peace with diet*” self-help book

From this assessment, the researcher conclude that all participants have improved their psychological flexibility after reading “*Making peace with diet*” self-help book as compared to pre-intervention.

### 6.4.2.2 Change interview

Based on AAQ-W, all participants showed improved psychological flexibility. Participant R1 and R2 improved, but the amount were not as much as the other participants. This subsection further explores their understanding and practise of each psychological flexibility elements.

#### 6.4.2.2.1 The outcome change

Table 6.9 shows summary of participants' improvement in terms of outcome change specifically regarding knowledge of psychological flexibility and practise on healthy eating behaviour.

Table 6.9 Participants' improvement in terms of understanding of psychological flexibility concepts and eating behaviour

No	ACT component	Yes (/) or No (X)				
		R1	R2	R3	R4	R5
Gain knowledge about psychological flexibility						
1	Understanding of contact with present moment concept	/	/	/	/	X
2	Understanding of self-as-observer / Self compassion concept	/	X	/	/	/
3	Understanding of values clarification and committed action concept	/	/	/	/	/
4	Understanding of cognitive defusion concept	/	/	/	/	/
5	Understanding of acceptance concept	/	X	/	/	/
Improved eating behaviour						
6	Control portion size	/	Nil	Nil	/	/
7	Reduce or cut sugar intake	/	/	/	/	/
8	Increase fibre intake	Nil	Nil	Nil	Nil	/
9	Reduce fat intake	Nil	/	Nil	Nil	Nil
10	Manage craving	Nil	Nil	/	/	/

In terms of understanding “contact with present moment” concept, all participants gives right answer except R5. Participant R1, R2, R3 and R4 understand being present means being aware when doing decision, being conscious and being mindful with what is happening.

Its more towards like... ok... Whenever I am being present, I cannot have any distraction. I have to be like quite and just be with my mind. Ok. Now anything that I do, I am aware there is no distraction. Is the thing I am doing now good for me or no. And that part makes me realise that “Owh, now when I feel, when I see, when I hear, when I smell, ok I know this is good for me. I know this is bad for me.” So yah, that part. (R1, DU[I] 74)

In general, I think like... being present or being conscious about my surrounding, really help me in everything in general.(R2, DU[I] 129)

Its like we are not only follow our instinct, focus on our surrounding, which we realize how something will affect us. Something like that. and then, we just realize what we did , will affect our future, making decision not spontaneously. (R3, DU[I] 85)

Just being in the moment lah. Being mindful of what is happening. All those senses. Like what you see, what you smell. Without thinking what happened in the past. (R4, DU[I] 145)

Only participant R5 failed to describe concept of contact with present moment. She instead perceived it as being kind to self.

I think, being present is similar to awareness. I think, its like.... It makes me present when you give comparison between good coach and bad coach. So it makes me present. It makes me feel present and gives me awareness because, before this, I only ... I don't know that we can be kind to ourselves. There is a good coach for us when we are eating. Like that's. I remember. I remember the , whats , about like will we hate ourselves. If we become a bad coach. You eat very many, its not good for you. Its... you will become fat and no one will marry you. Me lah. After that , after I discover new coach, the kind coach, I think I can take it easy lah. Because it really makes me realise lah. Because, *macam mana ek*. It makes me realize that its okay for sometimes to fail. *Ha macam tu lah*. Because I like myself, my experience, I've been too hard to myself. When I cut sugar then I manage to cut it one week. But when I fail, its really I become a really bad coach. Then I eat more. (R5, DU[I] 155)

The concept of self-as-observer were understood by all participants except R2. Participant R2 reported that she found it hard to understand the concept (refer section 6.4.1.1). Other participants such as R1, R3, R4 and R5 understand self-as-observer concept as being the good coach who advise self and third point of view.

This week when I read 4 th chapter. Ok I still have the craving. Let say the craving. And I am the type of person, I have to express it. Do I have to tell someone or parent. Owh I really want this but I cannot have it because it is bad for my body. So when I see myself in this situation, I know what I have to do. I am aware. I need something to release it. so I have to tell either my friend or my mother. And then they will say, they will like the coach, like the coach that it says there. “Ok you know that this is bad. But you doing so well.” And there be a point when they say, “If you want , you just take little bit. Not too much.” So I would say in that sense, I am doing good in this kind of things like. I tried to distract it. or maybe lessen it a bit. (R1, DU[I] 86)

Observing self is like, third POV. Something that you see yourself as a character in a novel....means that if I observe myself as a ... I put myself as a novelist. This is what I understand. I put myself as a novelist and the character is me. So how I want to curate this character to be you know, more smarter in making decision. Something like that. So that is what I think about observing ourselves. (R3, DU[I] 93-97)

Observing self? For me its putting yourself outside. And like seeing ourself as a third party. (R4, DU[I] 151)

Maybe its like my imagination. For example, if I want to eat, I will imagine I am seeing third POV. Not first person. So, my rice portion size has reduced. Because I imagine “You try to see this rice. Don’t you think its too much?”. (R5, DU[I] 184)

All participants were able to grasp the understanding of “values” and “committed action” concept. Participants R1, R4 and R5 perceived values as something important that gives reason to change the behaviour. Participants R2, R3 and R4 believed that values help to motivate action.

What I understand about values. Values is something like that I feel ok, when I say values, like what the values , what is the values that I will get from reducing 3 to 1 teaspoon sugar. First I won’t feel bad from getting sugary drinks. Second it helps to improve my health. It makes me feel good. So I find this value is a positive value and I like it. So that’s my definition of values. (R1, DU[I] 132)

So I think, for values, if we have like . you know how the degree of values are different. There are the most important and the least important one. So like, if the value is something that is more important to someone, they might feel that, they are needed to do that something. But if it is like least important, they might not, they might just shrug it off. (R2, DU[I] 235)

Values is something that drive us, drive us in every day life. Instead .. we need to find why we did something. The core. The core of our action. So what drive our action. So from there, the values is something that we want to have in our heart. Not something that temporary but permanent. (R3, DU[I] 176)

What I understand about values, I think same like what I mentioned before. Its deeper than the surface. Its focusing more on what we are struggling that is related to our values. For example for me, my values is to become a better person. To become more active. To become a better person *lah*. Like as a young person *kan*. I think that is the main value that I hold on to. But it has nothing to do with like food or anything. But that's like the goal *lah*. That affects. I think there is value that I hold on to why I am changing or I should change my food habits. Its because my value. That value also drives motivation. So values and motivation, they are interrelated. (R4, DU[I] 194)

Values are something that a person hold that is important. For example, maybe some of us value kindness, some of us value hardworking, so. If we want to become more healthy person, we need to have that kind of value. (R5, DU[I] 250)

All participants also gave relevant answers when asked about understanding of “cognitive defusion”. Participants R1 and R5 understood it as not merely following the thoughts. Participants R3 and R4 understood it as stepping away from thoughts or putting self outside from self. Participant R2 realised that her thoughts could be nonsense.

Its more towards like you embrace, you embrace it there. But you don't fully absorb everything. Its like how, let's put in a context. Its like how you want to look at stupid people. You want to fight with them but you chose not to. I feel that's how my brain is. (R1, DU[I] 216)

From my understanding, when we put a distance to our thoughts, is like we try to ... How should I say it. We try to isolate, or we try to neglect the thoughts about maybe craving. Cravingness. For example we craving to eat chocolate or to eat something, coffee for instance. So I think, to move away from the thoughts is we just accept the thoughts. We just thank our brain to think like that "Ok, thank you brain, because you gives me that kind of thinking, but I am ok" we just neglect like that. We accept them. We validate them. But we don't follow their instruction. Haaa. Like that I understand. (R5, DU[I] 356)

What I understand is that, we need to realize that thought is one of the..., something that we can step away. How should I say it... I mean, we understand that thoughts have benefit and have its, you know.. negative. So to beware of it, we need to step away from it, because from there we can realize that there is something that we called thoughts make ... you know... advise to us. (R3, DU[I] 239)

The one with 3 stages. At first, have the thoughts, then I have this thoughts of thoughts. Then, ... I think that is very important. Because like you putting yourself as a third party sort of. Haah. Uhm, personally how I took it after reading that kan, its like putting yourself outside and seeing yourself as other person. If like that other person think of that like that, you must feel bad about them thinking like that. So sort of... if other person can think as such, I shouldn't be thinking about that. About myself like that.. so, its very important cause I think thoughts, thoughts can happen when you have unbalanced emotions. So when you are sad, when you are angry, you can have like irrational thoughts, so .. I think to manage those kind of thoughts, you have to put yourself outside, or put your distance lah. Put .. like what you said put a distance with your thoughts. So yah. That's the... I should ... that is also one of my biggest struggle too. I fail to like see those thoughts in a distance or as like other person. (R4, DU[I] 321-323)

So when I overthink, while I read this, I get.. I tried to do it. Like I tried to do the technique where if I were to overthink about this, its only what my mind think of it. Its not something like people think of me. So I am not supposed to think of that thoughts as someone else's thoughts. Its just within me, I should stop thinking about what people think of me. Something like that. Because not everyone is similar. Because not.. what I think is not what you think. So it could be what I think is simply nonsense, something like that. (R2, DU[I] 324)

Last part of understanding is "acceptance" concept. All participants are considered as able to understand the concept except participant R2. Participants R1 and R3 understood "acceptance" as willing to experience discomfort if there is benefit or values out of it. Participant R4 accepted that process of changing is always

uncomfortable. Participant R5 perceived it as letting the feelings flow inside her without being obedient to it.

Ok. What do I understand about it. Like I said again. When I say it relate to me. I am a type of person like, if I do this particular things, what kind of things can I get out of it. I have to make sure that this one is beneficial for me. So if I fast, ok like maybe for muslim fasting is like obligation right. If religious matter. But for maybe those who want to go for diet or what, they can opt for fasting. So its more towards like how am I using this method to improve myself, my body something like that. (R1, DU[I] 240-242)

Willingness... as long as I have strong values, I can do it.. I mean, if I don't have you know... a strong foundation of why I am doing this, I think, I may not have any... you know.. willingness to do it. Or sacrifice something like that. So basically we need to have strong foundation of why we do this. (R3, DU[I] 259)

For me, what I understand is its just it won't be long. Its just, the discomfort *kan*, only a short period of time. So its part of the process sort of. Because I already ingrain in myself that change is never comfortable. And honestly not everyone is ready to do that. That is why many people fail. So, you have to have the willingness ,that willingness you need to have. Haah. Like it is important to have. Because it is not *easylah* to be honest, that all the discomfort. But it is part of...what I understand is, it is just a part of the process. It is not that a sign to give up. Its not a sign to give up. But more like, normal. and sort of, don't be defeated I guess. Because, its only like... the anchor. Like in a boat. (R4, DU[I] 343)

From my understanding, its like something that we cannot run away from. That feeling of craving, that feeling of frustrated or sad. And etc. But we need to learn how to deal with it. We need to learn how to manage it. So some of it like we just need to let the feeling flow inside us I guess. But we cannot follow or obedient towards that. Like, ok, I crave to eat junk food and intend to take it. "Its ok, today is cheat day." Every day is cheat day rewards. We cannot be obedient. Or we cannot just follow the thoughts *lah*. And the emotion. We need to have an anchor that will protect us from that. (R5, DU[I] 364)

With knowledge of psychological flexibility, all participants were able to make some changes in terms of adopting healthier eating behaviour such as controlling portion size, reduce or cut sugar intake, increase fiber intake, reduce fat intake and manage cravings.

All participants reported to cut or avoid sugar intake such as sweets and sweetened beverages.

So I like manage to cut or reduce taking sugar-based drinks. (R2, DU[I] 271)

I already cut my sugar, I mean almost 2 months (R3, DU[I] 261)

I cut my sugar intake and able to reject my friends' to buy me something.. and I hope with that people aware of my intention to cut sugar. Well, I achieved my target for now; to not eat unnecessary food with high in sugar like dessert and sweet beverages (R3, DU[J] 11)

I think yes. Like previously, when I cope, I still fail. Ok I just drink one cup per day. But after I read this chapter *lah*, I don't drink any more. I don't take a cold drink, I start to exercise. That's a big difference. (R5, DU[I] 368)

Participants R1 and R5 reported that they had started to control food portion size since reading the book.

Because there is one event... that I really love nasi kandar. So I tried myself, as in I put value in what I eat now. I want to be aware. Then I know that I crave it so much to the point that "Ok I can eat it but I have to reduce the portion, I have to limit myself to one type of curry. And more veggies." (R1, DU[I] 46)

But I've reduce my rice portion size and increase my vegetables intake. (R5, DU[I] 201)

Participant R2 reported that even though there are some challenges, she managed to cut or reduce fried foods.

For something like fried, I think I manage to cut or like I reduce taking it. (R2, DU[I]267)

Participants R3 and R5 reported they had managed the craving by not following the desire.

So if I feel that I want that, I will go for that. But after I read the book, I tried to avoid it. And the only thing that makes me you know, as I mentioned before is social circumstances *je lah*. (R3, DU[I] 190)

Like for example previously, when I have craving, the cravings is an obligation for me to fulfill. I need to find that. By hook or by crook. But after I read the book, no, that is not an obligation, that's just thoughts that I have. (R5, DU[I] 445)

Participant R5 said that other than avoid drinking sweetened beverages, she also had started to eat more vegetables.

To the extent, my roommate noticed “Uish, you’ve started eating vegetables now”. My friend ask “Since when you eat vegetables?” I eat vegetables because I force myself. Because I realize that vegetables are important. I hope I will be consistent. (R5, DU[I] 201-205)

#### 6.4.2.2.2 The process change

The AAQ-W presented in 6.4.2.1 shows evidence of improvement in ACT processes in general. In this subsection, change interview intend to explore if every component of ACT processes has improved after reading the book. Table 6.10 is a summary of ACT processes improvement among research participants.

Table 6.10 Summary of ACT processes improvement among research participants

No.	ACT component	Improved (/) or not improved (X)				
		R1	R2	R3	R4	R5
1	Improved skill of making mindful eating decision (contact with present moment)	/	X	/	/	/
2	Improved self-compassion	/	X	/	/	/
3	Improved values clarification skill	/	X	/	/	/
4	Improved committed action skill	/	/	/	/	/
5	Improved skill of cognitive defusion	/	X	/	/	/
6	Improved acceptance skill	X	X	/	/	/

Based on change interview, participant R1 and R2 reported lack of improvement in one or more components of ACT processes. This is consistent with their AAQ-W result where reduction is very little (9 and 13 reduction points). On the other hand, participant R3, R4 and R5 reported improvement in all aspects of ACT processes. This also consistent with their AAQ-W result with bigger amount of reduction points (44, 34 and 71 reduction points).

In terms of being present especially during making eating decision, only participant R2 gives excuse. The other participants reported they experienced better mindful eating decision after reading the book. Participant R1 becomes more aware of controlling portion size. Both participant R3 and R4 will pause before making eating decision. Participant R5 noticed she is more mindful to include vegetables in daily meals.

Mindful eating is when you decide to eat nasi kandar, you think first. How many curry you want to take, the portion size. So far, that's me. Its challenge for this week. (R1, DU[I] 82)

It is more like if I want to follow my desire. It taught me to pause, something like that. (R3, DU[I] 79)

I would say, more. A bit more at least lah. For example when I practise , what I am tasting. Like the process of chewing. And then stopping for a moment at the moment and then deciding. I feel like that really big progress for me. (R4, DU[I] 149)

I think, its better than before. Because before this, I don't take it seriously. I don't aware for example, we need to eat vegetables. But after being more present, being more aware, like when I did not take vegetables just now because I forget, I feel like something is missing. (R5, DU[I] 173)

Regarding “self-as-context” especially in relation to being kind to self, only participant R2 refused to accept the idea that self-compassion can bring about positive changes. She still chose to punish herself when she failed to meet certain goals in life.

I think I am so harsh with myself. Because I tend to do in a cycle. Like repeatedly and then its basically like my life routine now. If I ever do something bad or feel guilty about something, I don't do well in my test or something, I will just go anywhere by myself and then I choose to starve myself. It's the way.. I basically punish myself for something that is not related to the thing that we ... the thing that actually makes me feel bad about. I wouldn't say that it makes me happy but I think by doing somethng bad, I should be punish. Maybe that is the mindset I've been living with. (R2, DU[I] 149-153)

On the other hand, all other participants reported being more kind to self after reading the book. Participant R1 started to motivate self with benefits of not giving in to cravings. Participant R3 tries to be kind to self. Participant R4 practises saying good words to self and participant R5 stops criticising herself.

Whenever I make a decision. There is some point in time when I feel like. Ok I should not eat for example. No... not eat. Not drink coffee. The reason why I drink coffee is because whether either first I love coffee. Or second I want to be like awake. But I know coffee is bad. And if I drink coffee I cannot sleep for one whole day. This is so bad. It's affecting my diet. So if I leave this coffee, I will feel like. Owh. I will feel good. But I don't feel as much as productive as before. But I even though I lose one but I gain two things. I can improve my sleep. I can improve my diet. So I just have to sacrifice my productivity. So this 2 things make me think "Owh ok. Its this is good." Yeah. (R1, DU[I] 88)

I don't think I am being kind to myself. I do realize that its actually relatable. Because when I did something, I make mistake, and I will criticize myself. When it says I need to be friend to myself, I actually reflect how I treat my friends. Its not like I criticise them, I support them. So I reflect that why I can't treat my friend better than myself. I should do the same. Because I tried to... like yesterday's mistake... something like that...and then I tried to be supportive, I tried. Even though its hard not to be criticique, it is hard not to critique ourselves but I tried. (R3, DU[I] 99-101)

Before this like I would usually criticizes myself. I think that is being kind to myself. Because I will improve myself. But I would not say those words to other people. So like right now, I am in the process of saying words to myself what I would say to other people. Like being more kind in what I say to myself. (R4, DU[I] 155-157)

I think, I being more kindlah to myself. I want to stop harshly criticizing self. I don't want to self-sabotage anymore. (R5, DU[I] 191)

With respect to making decision based on clear values, all participants except R2 reported that they decide on what to eat based on what are good for them. For participant R1 and R3, they make decision based on health concern. Participant R4 and R5, tried to remind themselves of their chosen values such as being more confident during work time or being more helpful to parents before they decided eating.

Maybe for the first day when I read this book, I was not that taking care. Not to say not taking care.. I do take care of my food intake. But over time, I get like distracted. When I get distracted for 1 or 2 or 3 days. I feel so bad. Why am I eating this food? This food doesn't give me like, my body doesn't need it. But then after I went through this, I realize what I did. I get back to track. And then when I get back to track, ok. Breakfast, I know that I shouldn't eat something straight away after I wake up. So what I decided just drink a bottle of water. And then after that I usually skip lunch, just straight away go for dinner. Dinner I usually ok, when I say I want to take care of my health, reduce my carb intake, increase my protein intake. If can , I have to reduce the fat intake. But I realize that how am I gonna get all this. Carbs, I think, I don't really reduce that much lah. And protein also, I don't get a lot of protein that much. But what I am trying to say, in every meal that I take, I try to think what is the level of like protein, carbs, and fat. (R1, DU[I] 136)

Because I am staying at home, when I reflect this book and I reflect it, I saw that I ... I mean last Saturday, I joined a program about 5000 steps. Its not about 10000 steps. And then, there is a health check which is free. And then, its not only about blood test, but they checked cholesterol too. So from there I try to guard my eating decision, by taking a step back. And then think that this food is actually contribute to increase in my cholesterol level. My cholesterol is fine actually. But mine was 4.1 is quite high but borderline. And then my decision making is influenced by my younger brother because his (cholesterol level) is higher, 5.1. However, the next day my mother said, if they recall, my brother's high cholesterol was it due to good cholesterol or bad cholesterol? Because cannot be checked. I thought, its impossible that his bad cholesterol Is a lot. As compared to me, maybe mine would be more. So from there, I start to step back. Is it actually contribute to my health. So actually I mentioned to you that I don't have values why I want to change my behaviour. So actually from this program, I have found my values. When I read this, I start can relate it more. (R3, DU[I] 180)

So not like “ok that’s ok, just eat, and not decide anything”. So like I become more aware of those habits like... ok my habit at that time, aware dulu. And then just relate to, after reading this part specifically, I tend to relate back to my value and motivation. Like what do I want to achieve, my goals actually. Sometimes I think about, I will be more confident in my workplace in the future. So yeah. That has added my effort in deciding what to eat. (R4, DU[I] 200)

Like this book is talking about values kan. Previously I already mentioned that I choose to add on vegetables inside my food. But right now currently, I tried to replace the sugar with fruits. MashaAllah. I still trying. It really gives me some reflection to be more rationale. When I want to eat something. I feel something. Like really positive lah. Because after this I have some vision, that I want to put value to be more hardworking, I want to help my parents to do house chores. So I tend to not eat more, excessively. Slow-slowlah. Because I realize lah , sugar can affect our health. Sugar can make me become more lazy like lethargy, tired. (R5, DU[I] 256)

Concerning putting commitment to action, all participants reported improved in committed action. Participant R1 able to design specific goal and this helps her in being committed in buying planned groceries. Participant R3 and R4 becomes more committed to improve eating behaviour after realising their values and specific goals. Participant R2 and R5 managed to be more committed in reducing sweetened beverages by limiting daily intake.

Yes there is different. Like I learnt basically the way that I think. Like “owh I know that I should not eat this” it makes me think again. Like for example in the book mentioned something like by Shahrul or Nurul story. It says that, I should avoid eating cake. And then after that it says, be specific. If you go up to buy groceries, I should not buy cakes. So this one actually makes me think like. It’s at the back of my mind. I didn’t brush it off. Ok If I go out, if I am at home, I know I shouldn’t do this. (R1, DU[I] 162)

Yes there is. In terms of commitment, there is (improvement). Of course there is. Because this book touch things that... I always asked myself, do I have goals or not? Is there any values that I hold on to? But after I read and then I reflect again, actually I do have. Its just that, its there, then plus external environment, just like I said before this, after attending the program (checking my cholesterol level), it helps and change my behaviour at some point. (R3, DU[I] 196)

Most certainly. Haah. Like I think cause I was already on my goal like, my losing weight journey, so like reading the book just help me progress more. In terms of emotionally and mentality also. So like, for example this chapter it helps me in like, implementing atau visualizing my values and goals in the future. Which would motivate me to “Ok, fight this craving if you want this, just for now.” (R4, DU[I] 218)

Yes. But there is also another goals that helps me. No. ermmm that motivates me to lose weight I guess. So another one is cutting sugar. (R2, DU[I] 271)

Like before this, to be honest, I would drink twice and then every day I will drink 1 cup of sugar-drink . but after I read this book, it really change me lah. It change my behaviour. I started to only drink once. And I started have like today I drink, tomorrow I don't drink. That kind of... and during like *raya haji*, I manage to not drink about 3 days lah. But after that I drink 2 days. I am still fighting. (R5, DU[I] 276)

Pertaining to “cognitive defusion”, all participants except R2, reported efforts of practising the skill. Participant R2 unable to notice if there is any thoughts that hinder her from pursuing her healthy eating behaviour. Participant R1 practised repeating the word (e.g coffee) many times to dissociate the word from its meaning and attributes. Participant R3 noticed the excuses that her mind make and choose to embrace the feelings. Participant R4 responded to the thoughts with kindness. Participant R5 just noticed the challenging thoughts without following its demand.

I keep telling myself “just eat it lah”. But, there are times that I just eat it. There are times I didn't. So like, its there. There is one funny thing that happened to me when I was trying to control myself. I applied the same thing. You know the kopikopikopi. I get tired why I like this cake. But other benefit that I get. So I keep on saying. Kekekekekekekekek. It did work, but, *oklah* like of course, again I go back to it. So I just have to go through the process, “yes or no” (decision making exercise) (R1, DU[I] 226-230)

Erm... I've always thought “If I eat that, I can...” you know, “move on with the sadness.” And then because you know... with something sweet, we can... its like make ease or eliminate , something like that kan.

... I will embrace the sadness actually. If I am sad, I will just cried it out. And then just , I mean I will lay on the bed and then feel the sadness, something like that. And then just take a moment of what make it, I mean something that makes me sad. And then, yes, after I embrace it, because usually if I am sad, I will try to grab something sweet in front of me. Because my room I will have sweets . So whenever I feel sad, I will just take it without... you know... comprehend why I am sad, something like that. So because of this , I mean, you know, because I want to cut the sugar, I just take a moment and then lie on my bed thinking why am I sad. And then, it not magically disappear, but it gradually disappear. I mean the urge to eat something sweet. (R3, DU[I] 245-255)

So the thoughts would usually be ... there is no particular thoughts but its emotion is so depressing because after...the thoughts... would be after working so hard to lose many kgs. Then it increase again, its ... I would hate my own body. Haa that sort of...Like why other people do not have to go through this difficulties of restricting diet, their bodies are just fine. And me, I have to struggle for months just to lose one kg. haa that sort of...After reading the book, to be honest the impact is, I tried not to change anything like give up. Or giving in to cravings. For example I will counter back. Just like the book suggested. Like interact with it. I always counter back for example, If I ate a little bit more carbs, after like long time. I would interact with myself like “At least you did not take more”, “At least you did not take this or that”, “At least only one”. Or like “You’ve started dieting.. So its okay to have one day of..” haah. So like comforting myself. Because I literally don’t have any weight loss journey buddy. Or a community to lose weight. So it entirely up to myself to comfort myself. But, the most important thing is, I will never give up lah..

Like... “Oklah give up, just eat.” Ha... no.. no.

That is result from reading the book also. Usually because before this I ‘ve been in weight loss journey tau. When I am in that situation, I just give up. And I eat again, it increase again. But like after reading this book, knowing that the thoughts are normal, even knowing the thoughts are normal is a big thing. So its ok. Its normal. And I interacted with it. “Ok. Tomorrow I start again”, ha that sort of. (R4, DU[I] 331-337)

I think the challenging thoughts is, I guess when. Even though I put an effort to eat, I still think that “I will be the same”. That is some of the thoughts that I still try to fight... I just try to think another thing other than... Maybe I think more important stuff when that kind of stuff... whenever that thoughts come across my mind “Owh, I am not capable to change, it will just be the same.” I will start to think more important thing. For example looking for job or helping others. Ha, more important to outshadow the negative thoughts. (R5, DU[I] 358- 362)

Concerning “acceptance”, the participants gave the following scale when asked “How willing are you, in a scale of 1-5, to experience uncomfortable emotional and physical sensations in your efforts to achieve this goal?” Table 6.11 showed that participant R3, R4 and R5 reported improved acceptance skill after reading the book. Participant R1 and R2 reported no changes in terms of their willingness to experience uncomfortable emotional and physical sensations in their efforts to achieve the goals.

Table 6.11 Scale of “willingness” before and after reading the book

No.	Participants	Scale of “willingness” [1- Very unwilling ; 5- Very willing ]	
		Before reading the book	After reading the book
1	R1	3	3
2	R2	3	3
3	R3	2-3	4
4	R4	1	5
5	R5	0	5

#### 6.4.2.2.3 The linkage between outcome change and process change

In order to see if the book really help the participants with ACT processes change that influence the outcome changes, the participants were asked two interview question:

1. Does the book help you improve your skill in modifying eating behaviour?  
If yes, how is it so?
2. Were there any parts of the book which you found very helpful / not helpful?

All participants agreed that the book help them in modifying their eating behaviour. They also found the book, which discusses the ACT processes, helpful and believed that the intervention (bibliotherapy module) played a key role in facilitating the change. The following figure illustrate answers from the participants.

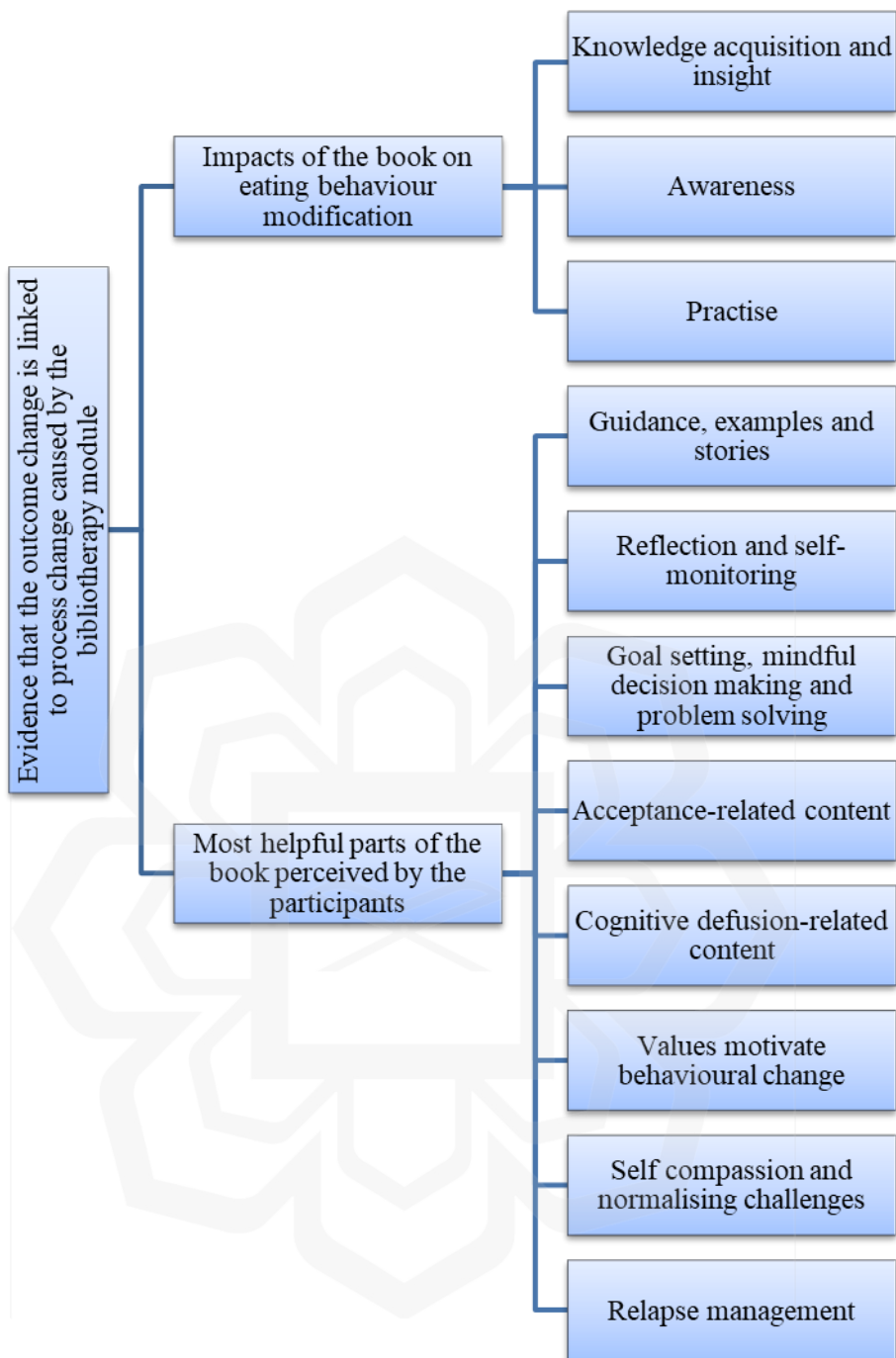


Figure 6.6 Evidence of Outcome Changes Attributed to Process Changes from the Bibliotherapy Module

When asked about the book’s impacts towards their dietary behaviour change, three themes generated from their answers which are knowledge acquisition and insight, awareness and practice.

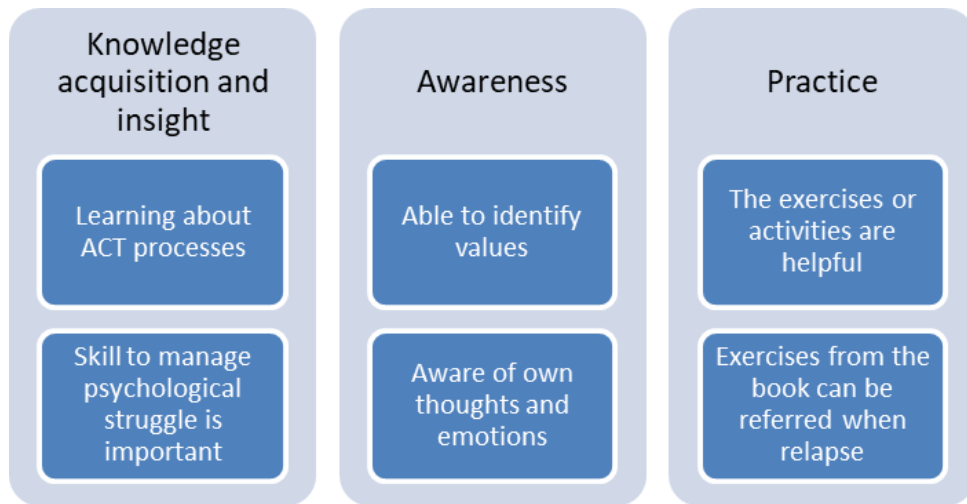


Figure 6.7 Impact of the Book on Participants' Eating Behaviour Modifications

Pertaining to knowledge acquisition and insight, participant R1, R3 and R4 emphasize the role of understanding ACT processes. Participant R1 and R4 relate so much with their understanding. Participant R3 appreciated that she gained insight with regards to her values.

I would say, gladly honoured so. Because from the first chapter I think, about values. Then it goes towards, the acceptance. So I find it helpful to the point that before reading this book, I always tell myself like “Why am I like this, I want to change but cannot change.” There is always gonna be 2 version of me. One accept , and another is not accept. But through this book, I can learn I can accept it. “Owh, why, how?” Its more towards how I accept it. So out of all the values and towards on how can I learn to accept it based on the values that I want to get out of it. What is my goals, what I want to achieve, what person I want to become, I find this book is very helpful. (R1, DU[I] 287)

Because the book does not like explain or recommend “Owh.. which diet works best , which diet doesn’t work.” It doesn’t mention method of dieting. And pushing people to do one certain kind of diet. Its relates more to internal struggle that everybody struggles with. So it helps a lot psychologically, emotionally. And on identifying values. The values. More on like solving internally. Than externally. Like solving internal struggles than choosing what to eat. (R4, DU[I] 449)

I think, the intention of this book already mentioned how there are many books out there about diet. But there is none about the psychology itself. Because .. and you also said about, many examples about your clients. And that it really like, this is what the problems that many people out there go through and then because of this book itself, it modify, its not like modify, but it changes my perspectives on having values itself. Because I am someone, because if I,.. because I am not, I do not have values like, you know the previous one. I was like “Diet? Never mind”. But because of this book, I reflect back why I did my diet previously after my SPM. I think because I want to you know, I actually, I surprise by my weight at that time. And I want to change it because I want to be prettier something like that. So actually, when I read this book, I actually reflect what I’ve done previously that I has values actually. But that thing already forgotten because of you knw... many times has parted.. and then it reflects what I need to do lah for this life actually. Its not only about eating. Eating itself is not like solution, like you know, having a depression or stress, we eat. But somehow it actually not a long-term solution. It is just short-term. And it will give us long-term impact. (R3, DU[I] 314)

Participant R4 also emphasized that skill to manage psychological struggle is very important. This requires knowledge and practise.

I was looking into ketosis for example, the benefit of ketosis, the effect after that, what happens when you start doing ketosis. So all those which is informative. Bute they never once mentioned about the emotion and struggle. Which is the most , for me lah, the most important thing especially at the start because cutting sugar is the most improtant part tau of diet. But, cutting sugar, its like you’ve been taking drugs, you have to stop the drugs, you will go crazy. And they seldom mentioned that part. Like combating emotional and psychological struggle tu , really rarely that they mentioned it. And Ironically most people fail in that area due to such factors. Because I know, because I’ve gone through many times, throughout my teenagers, I was skinny before this. My weight goes up and down. I defeated in this segment. How psychological ... hmm...you can have the best diet method, but if you cannot be good in that segment, it’s a waste. For me, that’s the root cause in which it is mentioned in this book. And all dietitians does not address this root cause. (R4, DU[I] 451-453)

Regarding awareness, participant R2 highlighted the fact that the book helped her in terms of managing thoughts and understanding feelings.

In terms of managing my thoughts and also being able to understand the feeling. Like my cravings and all. So instead of doing it by relieve it, I tend to... Well I get to understand why and how I can manage them. (R2, DU[I] 393)

For example, I throw back to my meal time, be aware of everything like the taste, and then when its coming to my stomach. Like being aware. Because sometimes before this we don't have awareness but this book makes me, aware of my thoughts , of my emotions of all what am I doing physically. (R4, DU[I] 449)

Concerning “practice”, participant R4 and R5 reported that the exercises or activities from the book really help them to apply the ACT process in their daily life. Participant R5 mentioned that the exercises from the book really helped her to practise and even if she relapse in the future, she can review the exercises again to practise the ACT processes.

So especially me whom so hard to manage emotion. I think this book really make me practise a lot of stuff that to be honest, out of my comfort zone. Because I've never done it. (R4, DU[I] 449)

Yes. I think this book really helpful<sup>ah</sup> for me to modify my diet. I think because like , usually I consult with the net, no references, no exercises to do. Just read without any practical thing to do. But with this book, you giving me many exercises, really helpful for me to make me remember. And then when I forgot something, I just need to open the book. Maybe I forgot about what is my values. Why I want to be more healthy. So I just open the book and then I am “Ok, how to be more aware about it.” So that's why I think the book is really helpful for me. Rather than just read it from the internet, or maybe hearing it from other person. So the book is realy helpful <sup>lah</sup>. (R5, DU[I] 435-437)

When asked about most helpful part of the book, each participants shared various answers. Eight themes generated from this question with half of them directly related to elements of psychological flexibility processes while another four are elements of most chapters in the book. Figure 6.5 illustrates the eight themes mentioned.

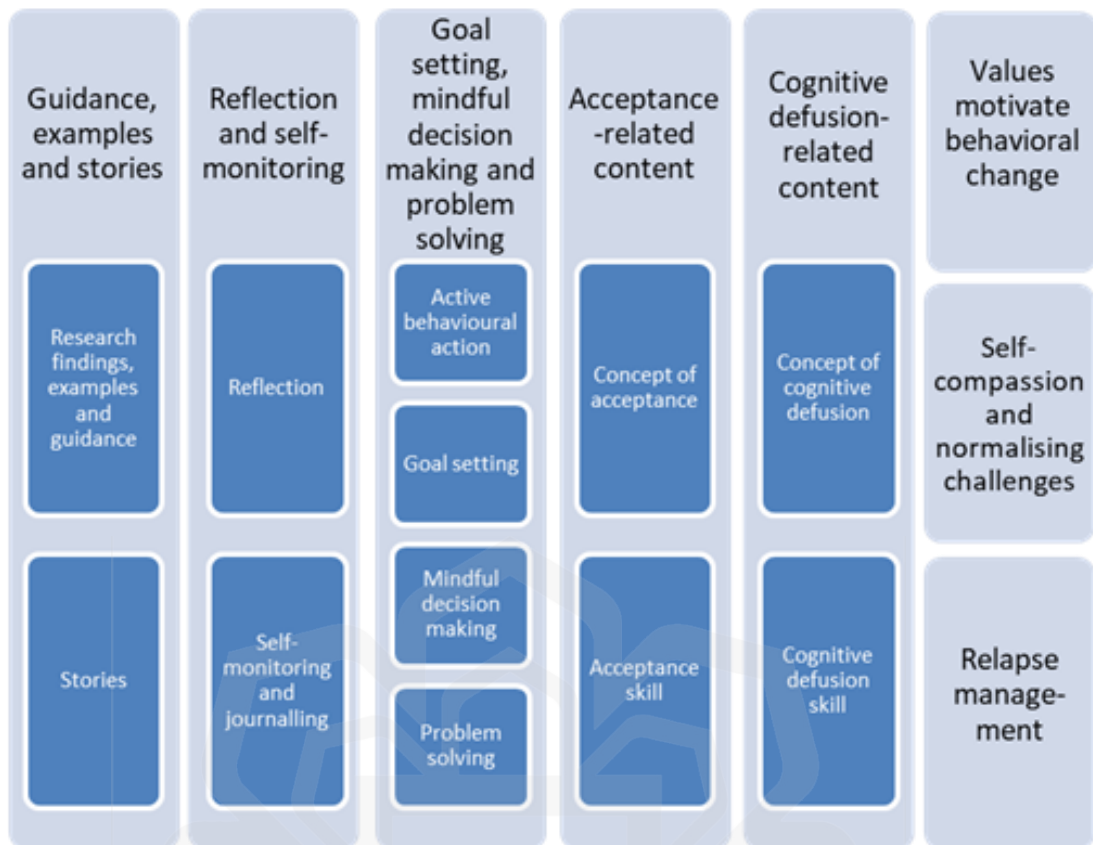


Figure 6.8 Helpful part of the book perceived by the participants

The first theme for helpful part of the book perceived by the participants is guidance, examples and stories. Participant R5 mentioned that laying out the research findings proving ACT as effective is helpful to make her believe in the bibliotherapy module. Both participant R1 and R2 said that the way the content of the book is written makes them felt as if there is a helping professional at their side.

And the research. 3 things. Because I love to read something that is factual. Because when I read something based on reasearch, facts, only by using that I will believe something. Not from poster, there is no research. I tend to not believe it. (R5, DU[I] 38)

And the...when I want to reflect myself, there is an example on how I have to do it. So it makes me feel “owh ok, I am being guided. As if I am in the presence, as if there is a psychiatrist with me.”(R1, DU[I] 70)

I feel better than I did before I read the book. The book has changed my perspective on having a healthy lifestyle. It feels like there is a counsellor by my side when I read it. I am a stubborn person, so the book has transformed me from someone who didn't care at all about my body into someone who cares about it. Previously, I didn't work out or exercise at all because I didn't think it was important. (R5, DU(J) 15)

Participants R2 and R5 could sense universality therapeutic factor through examples from stories.

I just say it just now which is because there are so many people. There are so many stories in this book that illustrate my feelings as well. Its kind of like, fun and also make me realise that more people also going through the same thing as me. I think most part of it is, its helpful. And beneficial for me. Because I suddenly realise that knowing from someone's life experience can make myself more motivated.(R2, DU[I] 42-44)

I think, the part that guy *tu*. I think that really makes, the guy chapter really give me impact. Until now I remember. I think I read it, but until now I remember about the guy. (R5, DU[I] 137)

Participant R5 further mentioned that summarizing all concepts through stories of Nurul and Shahrul is better rather than simply telling the concept.

Very helpful, I think, where there is some part when we gave a recap towards every previous thing we already done. About the values, open to experience. The most helpful part is when you give the situation about Nurul and Shahrul how they use the techniques to accept, how to find the... So when you gave not just a point about previous things. Not just a recap about the main point but also gives the situation. I think that really helpful. Because "Ok, I remember the story". I mean not merely, just describing the skills but also showing examples through stories. (R5, DU[I] 411-414)

The second theme for helpful part of the book perceived by the participants is reflection and self-monitoring. Participant R1 gain self-realisation from the reflection activity provided in the book.

The reflection about the short term and long term. That's quite useful. Because it actually makes me think back, owh everything I've done so far is actually short term. I didn't realise, ok i should think about this in long term. So that part makes me think, like makes me ponder more. (R1, DU[I] 30)

Most of the participants appreciate the content which gives them the idea on how to monitor themselves.

I think it helps me in understanding how do I become consistent in doing whatever I want. So its kinda like helpful in terms of the timetable. (R2, DU[I] 381)

About the "monitoring commitment". (R3, DU[I] 304)

But I like... that it is helpful for me the most is about that journalling. You have that journal ... journal whatever... But I think, this chapter sort of summarizing all previous topics. Because its about monitoring self. To be honest, I have been doing this for a long time. But like , not like I am journalling. I did not jot down anything. So when I saw this table, its like... owh... ok.. Its gonna be... its important to do those thing lah. Like there is self-monitoring with report and notes. (R4, DU[I] 405-409)

Next the chapter also tell us to observe our commitment or how .. how should I say this ya. How from individual who has been observed by others. How that individual can observe themselves. So the chapter also tell about that. And how we want to observe ourselves like monitor ourselves. To control eating or to control portion size. (R5, DU[I] 391)

The third theme for helpful part of the book perceived by the participants is goal setting, mindful decision making and problem solving. Both participant R3 and R5 appreciate the new information about planning active behavioural action for goal setting.

I mean because as I said just now about the active action. I mean you know how to.. I mean previously in the chapter 4 right, It mention how to accept, also, the story of Bob. We need to accept the suffering or something like that. So when day 9 mentioned about to accept is not a passive action. So when that concept is continued in day 10. About what is the active behaviour. So I think that's why I find it the best. Because somehow, about when Shahrul eat egg tart, its actually same with eating cake. I find it really relatable and relevant to me. Because if I stress, I

will eat. And then I find , I try to accept. I mean before this in chapter 4 and about story Bob, you mentioned about accept, so I accept. But in the sense that I chose to do another bad habit something like that which is playing games. Its not bad habit, but because I want to avoid that thing, I do this thing. And this thing in long term, its not good. (R3, DU[I] 170)

I think for the day 10, talking about how our behaviour is shaped by our value. I think this is very good. I think this part really makes me feel like... it shift my perspective on sugary food. Because before this I never know about there is passive and active behaviour. After reading this, I just found out *lah*, like I thought, I think the analogy is funny because you give analogy about ... passive is like “The dead person also do not eat.” So I think that is really... serious kak Ayat. When I read this part I need to stop reading. Then I need to process and then I laugh. I think this really good *lah* this part. like the part that change my perspective in day 10. (R5, DU[I] 282)

Both participants R1 and R4 loved the strategy to design goal which is SMART acronym.

I love... the part of the chapter that I like is when, the SMART guide. (R1, DU[I] 126)

To be honest, in this chapter, in this part specifically, I find every part very helpful like in its own way. Because the exercises are there inter-related but at the same time they are very different. I would say. So its not like ... so I find every part is very helpful in their own way. But the most helpful that makes me, ok after this I can do this, is the chapter with the SMART activity. (R4, DU[I] 186)

Committed in doing action is one of the challenges by many. The book guides the participants on how to do mindful decision making and further commit in healthy eating behaviour. Participant R3 appreciated the part that helps her to do mindful decision making. Participant R4 and R5 felt that the strategies that guide them to commit doing what they aim, is very helpful.

I mentioned before about mindfulness and how to see us from third POV. Something that usually novelist will do. I mean describe their character. Because it will, I mean, slower our decision making something like that. Decision making particularly in choosing what we want to eat, something that we desire, something like that. It is not like I will slower my decision making in doing particular task. It is more like if I want to follow my desire. It taught me to pause, something like that. (R3, DU[I] 77-79)

Mainly because of direction. Telling us what to do. Strategies. Practical... the direct strategies on how to do things. What is it called? Guidance *lah*. Haa. So more on action to do after this. Mainly that *lah*. (R4, DU[I] 437-439)

Owh I think the part where you extract the commitment exercise. That is adaptation from Harris 2008. I think it really helpful because like previously, before I read another chapter, I want to make some comparison *lah*. When I read previous chapter, I don't know how to have a commitment *lah*. But using this exercise it becomes more clearer to me. It really helps me to build my own commitment like we know *lah* commitment is really important to achieve something. To be more healthy. So I think by using this kind of exercise, its really open my eyes and mind. (R5, DU[I] 318-324)

While pursuing the behavioural action, there would be many challenges occur. Hence, problem solving skill is crucial to sustain targetted eating behaviour change. Participant R1, R3 and R4 value the problem solving activities given from the book.

Again, it goes back to the “challenges barriers”. The four points. (R1, DU[I] 283)

And of course with “handling barriers”. (R3, DU[I] 304)

So like, identifying our struggles, solution to the struggles. (R4, DU[I] 441)

The fourth theme for helpful part of the book perceived by the participants is “acceptance”-related content. Both concept of acceptance and its example of practice are perceived as very helpful to at least three of the participants. Participant R4 and R5 appreciate the acceptance concept that they get.

And also the introduction to ACT, I feel like its very new to me. And the explanation of it the examples I think its really helpful to prepare myself for the rest of the book. Its because, its about validating the bad experience.. not bad experience, the bad feelings, emotions and thoughts as well... Its not like completely invalidating, its like “You shouldn’t have this”. And about the Bob example, like letting it inside and just entertain him. It’s a good example of craving. And then that’s where ACT comes in. And explaining, its ok to have this bad thoughts, emotions. Yah. So some advices or some ... some ways , they said like “Don’t let it coming to your thoughts” “Don’t let the negative emotions get to you.” But ACT lets you actually process all the thoughts, emotions and everything. So yah. (R3, DU[I] 41-42)

I think another part that is helpful for me is the “willingness”. The willingness of someone to achieve a goal. For example when you show me this situation, of a person for example, for instance, someone feeling to went back home to help the parents because.. how should I expressed it? Willingness of an individual is like, willingness to cook for the family even though she is tired and lethargic. But when you give that example to practice to achieve a goal towards healthy life, for example like willing to cook before going to sleep because want to have a good diet. And then I thnk, its really, it inpire me lah. To have that kind of willingness. For instance I start to think about ...Ok, why is it that when we fast, we are willing to restrain ourself, accept the sense of hungry and thirst. But why is it on other normal days, I cannot do the same? Then only I realized, owhh, I can do it during fasting. But during other days, if I don’t eat for few hours, I feel like dying. (R5, DU[I] 332-334)

Specific techniques to practise acceptance skill are also perceived as very helpful to participant R2, R4 and R5.

I think for the part that “dropping anchor”. So like, in english I use it for pausing button. If I were to do something, when it gets stressful, I need to remind myself that not everything I get to do it, in one time. So I need to pause a moment and take a break for me to work further. Because I think, me personally, I tend to do something because I wanted to look at the outcomes. But I hate the process. Which is not normal for some people. (R2, DU[I] 308-312)

So yeah craving, I think craving is an essential problem everyone going through especially starting to have healthier diet. Personally it’s the worst struggle for me to have healthier lifestyle is the craving. So I think this is the first book that I read in all diet book that mentioned the problem. Because it focusing on psychological effect. (R4, DU[I] 36)

The “cycle of resilience”. I think that is really, teach me something new *lah*. Like valuable knowledge *lah* about values. (R5, DU[I] 242)

The fifth theme for helpful part of the book perceived by the participants is “cognitive defusion”-related content. Participant R3 and R4 benefited from learning the concept of cognitive defusion and its skill of practise.

About our mind is like a radio. That part is really, I mean. Basically, we always think, as I mention before, we always think what after we rationalise everything. We think that it is.. you know the right one, the right choice, something like that. But somehow we need to evaluate, to what extent our thoughts actually helps us. So, that’s what makes me really .. you know... reflect back what my mind always taught me. Because as you mentioned before, I mean in this book, how mind always gives us advise. But somehow is the advice help us or not. (R3, DU[I] 231)

I would say that craving part *kut*. The page 187. About... I feel like, the ... I think because it is new to me *kot*. That I wasn’t aware before. Its like ok,with words, it can be a symbol to us. That we can automatically think or feel about something. So like giving the situation in the counselling session. And seeing the client doing the activity *tu*, I feel its helpful for me. It’s a new thing *lah*. I’ve never seen this method.Yeah. At the end of chapter practise *lah*. But it took some time. After I understand. Because this involve feeling *tau*. Its not only understanding. (R4, DU[I] 289-291)

The sixth theme for helpful part of the book perceived by the participants is values motivate behavioural change. Participant R2 specifically benefited much from the part that mention about the importance of values.

Hmm, if I were to highlight something , I think the first part of this chapter is actually, expose me to a new world. Because I don’t really think that by having the good reasoning, would help me to, would motivate me to do something. But then when I look into the examples, it just shows that, “Owh.. people do this as well” So its kind a like beneficial for me as well. (R2, DU[I] 227)

The seventh theme for helpful part of the book perceived by the participants is self-compassion and normalising problem.

In terms of helpful, I think, it helps me in terms of thinking in positive manner. The one that, uhm. The one that I said about criticising just now, there is also one part where this, one of the experiences that say that rather than you criticize the self, why not you try to be your own best friend. By doing something helpful for yourself, rather than punishing yourself. Because I've been punishing myself for something that I cannot change. Its just something so awful actually. But I don't really realize that because no one really put it in words. Now that I've find it, now that I can read it from other people story or like experience, I realize that its not helpful for yourself therefore I need to be gentler to myself. To help myself. (R2, DU[I] 115-117)

But what helpful for me is when the dialogue between the counsellor and the client. Make me feel that the prblem that I am facing is normal. Even though its hard, its normal. Because like I seldom read any transparent dialogue like that before. So I feel like laying out the situation that happen in real life, help me. (R4, DU[I] 40)

I really like the exercise – writing a letter. I think, that is most helpful lah. As third party you see yourself. (R4, DU[I] 123-125)

The eighth theme for helpful part of the book perceived by the participants is relapse management. Participant R1, R4 & R5 mentioned that the relapse management information will help them to get back on track.

I find, as usual most practices I find it very useful to me. Its like make me to know how do I deal with certain situation, with certain cravings that I have. Or how I deal with like blackout moment. “owh” I am at that moment that I cannot go on. I just have to satisfy all my cravings. What I want. But at the end of the day, it just bring me back on track. (R1, DU[I] 204)

Because I think this is the book or like diet advice that everyone needs. That is not in other diet book. Because other diet book or other diet article, they only lay out like the advantages and disadvantages of certain kind of diet. And more scientific words but none of them mentioned about relapse. About what we are going to feel. They only like focus on end result. Like you are gonna be this, you gonna be that. But like this book motivated me because it mentions what is going to happen. And actually it is ok to feel that way. (R4,DU[I] 36)

And I think it's a good .. for me *lah*, this the real ending. Like the chapter 7 teach me about how if I skip or what if I facing. How should I say, if I am not capable to do all those, if I slilpped. Like there is a .. its like there is a day that we will not become inconsistent because we are human too. (R5, DU[I] 380)

Only two participants commented on the unhelpful part of the book. The rest did not see if there is any unhelpful part of the book. Firstly, participant R2 and R5 have negative perception towards self-compassion and mindfulness. According to participant R2, she disagreed with the notion of self-compassion as it might hinder her improvement.

And I think for me myself because ever since I grow up with my partents, we tend to get advise or criticize badly just to improve ourselves. Therefore I think, we as my siblings, ourselves, we tend to get criticized a lot. To improve ourselves. So I don't think by having someone advising me in a good way really affect me as much. Though I think that having a good friend or like someone who advise me in a good way, might help me like a little. But it does not really affect me to do the outcome I really wants or having the outcomes I really wants. (R2, DU[I] 93)

Participant R5 thought that practicing mindful eating made her want to eat more. So she refused the idea of eating mindfully to manage her eating behaviour.

The activity require me to eat slowly. I think when I eat slowly, I want to eat more. I tried to eat mindfully. But then I feel like "this is so good" and I want more. (R5, DU[I] 141-143)

Other than disagree with some content of the book, lack of engagement with book is also seen as unhelpful to some of the participants. Participant R2 noticed that there is a lack in example of students with limited financial resources. Thus, she thinks it is difficult to make sense some content of the book.

For chapter 4, it talks about how we as a person choose our own meal and all right? But then, there is no perspective in terms of the student perspective. Because for students, we tend to buy something that suit our pocket money. So the food or meals tend to be unhealthy rather than the one that is healthy. Because the one is healthy tend to be more pricier than the one that we can find it cheaper somewhere in the café. So I think, its kind of hard because for us a student, we will eat or like we will buy food according to our own financial. I think there are some parts of the context is kind of relevant but then there is also time that I think that "Owh, I don't actually buy this because I really want it". But it is actually that's the only choice I can buy because rather than not eating at all, I prefer to eat something (R2, DU[I] 61-67)

Participant R5 is not keen to do food diary so she did not engaged much with the book for that particular chapter. Participant R2 on the other hand, also unable to make sense of “the observer self” concept.

About the food diary ni. I think, erm... for me *lah*, its quite hard for me to use. Because it require me to jot down one by one. (R5, DU[I] 421-423)

Because I pause during the time, I don't understand the third POV part. (R2, DU[I] 113)

#### **6.4.3 Module development (final product)**

The formative evaluation of prototype 2 will guide the development of its final product. The researcher will make some refinements to the module based on the findings.

First of all, although most participants were able to understand the content of the book, the researcher should find ways to simplify the “self-as-context” topic, as participant R2 reported difficulty in understanding it. Other than that, one type of exercise was not positively responded by participant R4 which is visualizing the objectified emotion guided by written text. Clients who are very new to visualizing exercise might be uncomfortable to practise it on their own. Thus, one way of improving this is by providing audio or video of the counsellor guiding the process instead of providing merely text.

Secondly, integration of previous knowledge (e.g information from previous chapter) to current new knowledge (e.g information from the chapter the participant is currently reading) is important. Even though elements of psychological flexibility are being introduced separately according to chapter, the author should make an effort to curate the content so as the reader able to relate what they have read with what they are currently reading.

Thirdly, when designing worksheet, the author must consider the fact that the user of the worksheet are not with any helping professionals around them. This is important so that the worksheet produced are self-help and easy to understand. Some counsellors may have designed certain worksheet to be used with clients during face-to-face session. Such creative worksheets most of the time are suitable to be used in the session but not necessarily practical if being given to clients without any interaction and guide. For psychoeducational materials distributed to clients, the worksheets must be practical—for instance, designed in a linear format with proper numbering to prevent confusion.

Finally, even though there are numerous positive comments regarding the book's layout design, there are always room for improvement. The author agreed that a book with two major section (ACT-related content and non-ACT-related content) should be clearly be distinguished. The developed self-help book (*"Making peace with diet"*) presented ACT content in chapter 1 until chapter 7, while chapter 8 and 9 are solely dedicated for Qur'anic values and healthy eating guidelines. It is a good idea to cue the participants what topic is coming ahead to avoid them feeling abrupt ending when they reach chapter 7 while they could see there are another 2 chapters left (chapter 8 & 9) to be read.

## **6.5 CHAPTER SUMMARY**

This chapter presented empirical data on the usability and effectiveness of the developed ACT-based bibliotherapy module for sustained dietary behaviour change, namely *"Making peace with diet"* (prototype 2). Learners feedback were utilized to address the research questions during both the implementation and evaluation phases. All in all, data collected from interviews, journal entries, and pre- and post-questionnaire assessment demonstrated the practicality and effectiveness of the proposed module, suggesting the feasibility of using the *"Making peace with diet"* self-help book for sustaining dietary behavioural changes.

## CHAPTER SEVEN

### DISCUSSION AND CONCLUSION

#### 7.1 INTRODUCTION

This chapter summarizes the research findings and discusses the major issues that emerged during the study. It also provides the theoretical and application implications along with recommendation for future research.

#### 7.2 SUMMARY OF RESEARCH FINDINGS

This section summarizes the findings of the study with regard to each phase of the research.

##### **7.2.1 Needs analysis of developing an ACT-based bibliotherapy module for sustained dietary behaviour change**

The first phase of the research, analysed the needs of developing bibliotherapy module for sustained dietary behaviour change. Interviews among overweight and obese female young adults were conducted to explore the actual performance among those who failed to maintain their changed dietary behaviour. On the other hand, systematic literature review was conducted to identify desired performance related to psychological processes among successful weight loss maintainers. The gap between actual performance and desired performance established the suggestion of education or training and proved the needs of developing a module that filled in the gap. The findings from this phase revealed that the overweight or obese participants who failed to sustain their new healthy eating behaviour manifest psychological inflexibility. Thus, psychological flexibility should be educated or trained to help overweight or obese individuals sustain new healthy eating behaviour.

### **7.2.2 Design and development of an ACT-based bibliotherapy module for sustained dietary behaviour change**

The second phase of this research are the design and development of the bibliotherapy module (*“Making peace with diet”*) using analysed data from the first phase. The initial design principles that covers Acceptance and Commitment Therapy, bibliotherapy process (such as identification, projection, catharsis and gaining insights) and instruction message design concepts (communication theory and learning theory) were discussed with two experts of psychology background. Changes were made accordingly. The revised design principles remove the elements that are not in line with Malaysia culture and being replaced with more appropriate examples. This revised design principles guided the development of prototype 1 of bibliotherapy module (*“Making peace with diet”*).

Two experts among counsellors whom had been practising ACT more than five years validated the prototype 1 via interviews. In terms of content validity, six themes were generated which are 1) Informed evidence-based content; 2) Contextual contents; 3) Adherence to counselling principles and techniques; 4) Accurate or consistency in adaptation and translation terms; 5) Present psychological flexibility via “Triflex” and 6) Brief introductory chapter on ACT in general. Under consistency or construct validity, there are three themes emerged which are 1) Component of stories; 2) Sequence of psychological flexibility elements; and 3) Flow and connecting chapters. Five themes generated for expected practicality which are 1) Clarity of contents; 2) Engaging content; 3) Explanation of concepts and examples; 4) Conceptualizing concepts with techniques and activities; and 5) Entice motivation. Lastly, only one theme to explain expected effectiveness which is 1) Self-help book sparks readers’ awareness through specified psychoeducational approaches. Feedbacks from experts during development phase guided the development of prototype 2 bibliotherapy module (*“Making peace with diet”*).

### **7.2.3 Evaluating the developed ACT-based bibliotherapy module for sustained dietary behaviour change**

A four-week self-help book program was conducted during third phase of this study using the developed prototype 2. Five overweight and obese female young adults participated in the study. Prototype 2 was evaluated by interviewing the program participants each time they completed reading the chapter.

In terms of actual practicality, all participants were able to comprehend the content of the book and motivated to complete reading the book. Two themes were identified concerning participants' comprehension which are 1) clear explanations of concepts with usage of analogy and examples; and 2) relatability helps readers understand the concept. Participants had also revealed their motivational factors to complete reading the book. Six themes emerged as their motivational factors which are 1) values, goal setting and self-monitoring; 2) relatability and addressing personal challenges; 3) information, knowledge and insight; 4) the activities provided facilitate concept mastery; 5) reading experience and engagement; and 6) self-improvement and change.

In terms of actual effectiveness, all participants have improved AAQ-W score post-intervention with mean reduction points of 34 as compared to pre-intervention score. This shows all are experiencing better psychological flexibility after the intervention. Three themes were identified to confirm that the participants' outcome changes concerning healthy eating behaviour were linked to the ACT processes changes, impacted by the developed self-help book. These three themes are knowledge acquisition and insight, awareness and practise. This linkage is also supported by their response regarding most helpful part of the books as perceived by participants. Eight themes that perceived as helpful part of the book are 1) guidance, examples and stories; 2) reflection and self-monitoring; 3) goal setting, mindful decision making and problem solving; 4) acceptance-related content; 5) cognitive defusion-related content; 6) values motivate behavioural changes; 7) self-compassion and normalising challenges; 8) relapse management.

## **7.3 DISCUSSION**

The issue of being overweight and obesity is becoming increasingly prevalent. According to the latest data, more than half of the population in Malaysia is overweight and obese (Institute for Public Health, 2024). A revolution in the methods used to address this issue is necessary to prevent the statistics from continuing to rise. The conventional way of managing weight in Malaysia involved professionals among dietitians, nutritionists, nurses and doctors. The involvement of counsellor or clinical psychologist to help change eating habits are not common practise in Malaysia. Thus, this study highlights the acceptance of psychological approaches among Malaysians for modifying eating habits. The book may create awareness among Malaysian population regarding existence of psychological approaches to assist them in their journey of improving eating behaviour. In light of the findings of the present study, the developed bibliotherapy module in a form of self-help book may be viewed as a promising psychoeducational tool to change eating behaviour and further makes the changes sustainable. This section will discuss the findings of each phase in design and development of “Making peace with diet”, a self-help book for sustaining dietary behaviour change.

### **7.3.1 Psychological Inflexibility among Overweight and Obese Individuals**

In the introduction, it is mentioned that there is a lack of education and training in modifying eating behaviour which contribute to increasing statistics of overweight and obesity in Malaysia. In order to provide empirical evidence of needs to develop a bibliotherapy module for sustained dietary behaviour change, a study on needs analysis was conducted.

The research findings revealed that the overweight and obese young female adults manifested psychological rigidity as evidenced by experiential avoidance, cognitive fusion, distracted from present moment, fusion with conceptualised self, remoteness from values and lack of commitment in pursuing dietary behavioural goals. Hence, the research question is answered. There is a need to develop a bibliotherapy module for sustained dietary behaviour change which will bridge the

gap between actual performance (psychological inflexibility/ rigidity) and desired performance (psychological flexibility) among overweight and obese young female adults of Malaysia.

The findings of psychological inflexibility among the overweight or obese women support the findings of Ellis (2013) and Ibrahim and Rais (2019). In terms of experiential avoidance, emotions such as boredom and stress influenced eating behaviour among the overweight and obese (Ellis, 2013). In terms of cognitive fusion, being fused with excuses, negative thoughts and sabotaging thoughts influenced the participants to practice unhealthy eating behaviour and not doing physical activity in spite of realizing their importances (Ibrahim & Rais, 2019). Lack of commitment to allocate time became big hindrance to pursue healthy eating behavioural goals (Ellis, 2013). Taking actions without strong foundation of values also demotivate many especially when the outcome, such as amount of weight loss, becomes the measurement of success instead of acknowledging and appreciate all the efforts that had been put (Ellis, 2013; Ibrahim & Rais, 2019).

In contrast to earlier findings (Ciarrochi et al., 2014), however, little evidence of inflexibility among overweight and obese was detected. Only severely obese (BMI more than 35 kgm<sup>-2</sup>) men and women showed above average of inflexibility components (Ciarrochi et al., 2014). This different findings could be due to different environment, culture and social factors that influence both study population. The study population in the work of Ciarrochi and colleagues (2014) consists of Americans, who have substantial socio-cultural differences from Asian populations, including values and norms related to individualism-collectivism (Servaes, 2000). In contrast, this study was conducted in Malaysia which its socio-cultural context include life is centred around food (Yunus et al., 2022). Different methodology of study could also gives different conclusions. Ciarrochi and colleagues (2014) conducted a quantitative survey among 7884 Americans whom were under weight, normal weight, overweight, obese and severely obese. On the other hand, this study specifically explore evidence of psychological inflexibility among those overweight or obese women who failed to sustain their dietary behavioural change.

Experiential avoidance makes overweight or obese individuals avoid meeting people, giving in to craving and indulge in emotional eating. These might make them feel difficult to resist eating and perceive self as low self-efficacy for eating control (Chang et al., 2009). As a result, an individual easily gives up when face with difficulties and failure, unwilling to put commitment in pursuing eating behavioural goals. In contrast, the ability to accept uncomfortable feelings and sensation enable an individual to commit with new healthy eating behaviour even when cravings sensation or difficult emotions comes in (Pitil & Ghazali, 2022). Thus, educating the overweight and obese population about the concept of acceptance in psychological flexibility is important in weight management.

Since socio-cultural context influences Malaysian eating habits, it has been suggested that clinical management should prioritize helping patients to make choice in a food and social environment that is not conducive to healthy eating, rather than overly emphasizing individual responsibility for weight loss (Yunus et al., 2022). This aim can be achieved through ACT because ACT enhances an individual's psychological flexibility, enabling them to engage in goal-consistent behaviour despite contrary urges or environmental demands (Lilis et al., 2021). This strengthen self-regulation especially among those with food cravings (DelParigi et al., 2007; Gettens & Gorin, 2017). Education to overweight and obese population about the success of obesity management should also be related to improved health, function, and quality of life, achieved through attainable behavioural and psychological objectives, rather than solely focusing on the amount of weight loss. (Linné et al., 2002; Dutton et al., 2010).

Hence, there is a need to develop an ACT-based bibliotherapy module for sustained dietary behavioural change as it bridges the gap between actual performance among unsuccessful dieters and desired performance among successful dieters.

### **7.3.2 Design principles to develop an ACT-based bibliotherapy module for sustained dietary behaviour change.**

To the researcher's knowledge, there is a lack of documented design principles for developing self-help book using psychotherapy theories for dietary behavioural changes. Mostly, documented design principles are in developing digital technologies for sustained behaviour change (L. Yang et al., 2023) or weight loss intervention (Asbjørnsen et al., 2022). Anyhow, similar design features between self-help book and digital intervention include 1) Behavioural planning and goal setting; 2) Motivational exercise and realistic goal setting and 3) Educational material and information (Asbjørnsen et al., 2022). A self-help book serves best as psychoeducational material which gives ample information to the readers while digital intervention have other features that support sustained behaviour change such as personalization and real-time functions (L. Yang et al., 2023).

The design principles developed in this study are grounded in three theoretical foundations: Acceptance and Commitment Therapy (ACT), the bibliotherapeutic process, and instructional message design. Together, these theories explain what psychological mechanisms the self-help book aims to activate, how the reading experience facilitates therapeutic change, and how the content is structured to support understanding, engagement, and application. ACT provides the core behavioural processes that guide the therapeutic intent of the book. The bibliotherapeutic process explains how readers engage with the material emotionally and cognitively, moving from identification to insight and, ultimately, behavioural change. Instructional message design strengthens this pathway by ensuring that therapeutic content is communicated clearly, coherently, and in ways that minimise cognitive load while maximising motivation and comprehension. When integrated, these three theories form a coherent framework that supports sustained dietary behaviour change through a well-designed, ACT-based bibliotherapy intervention.

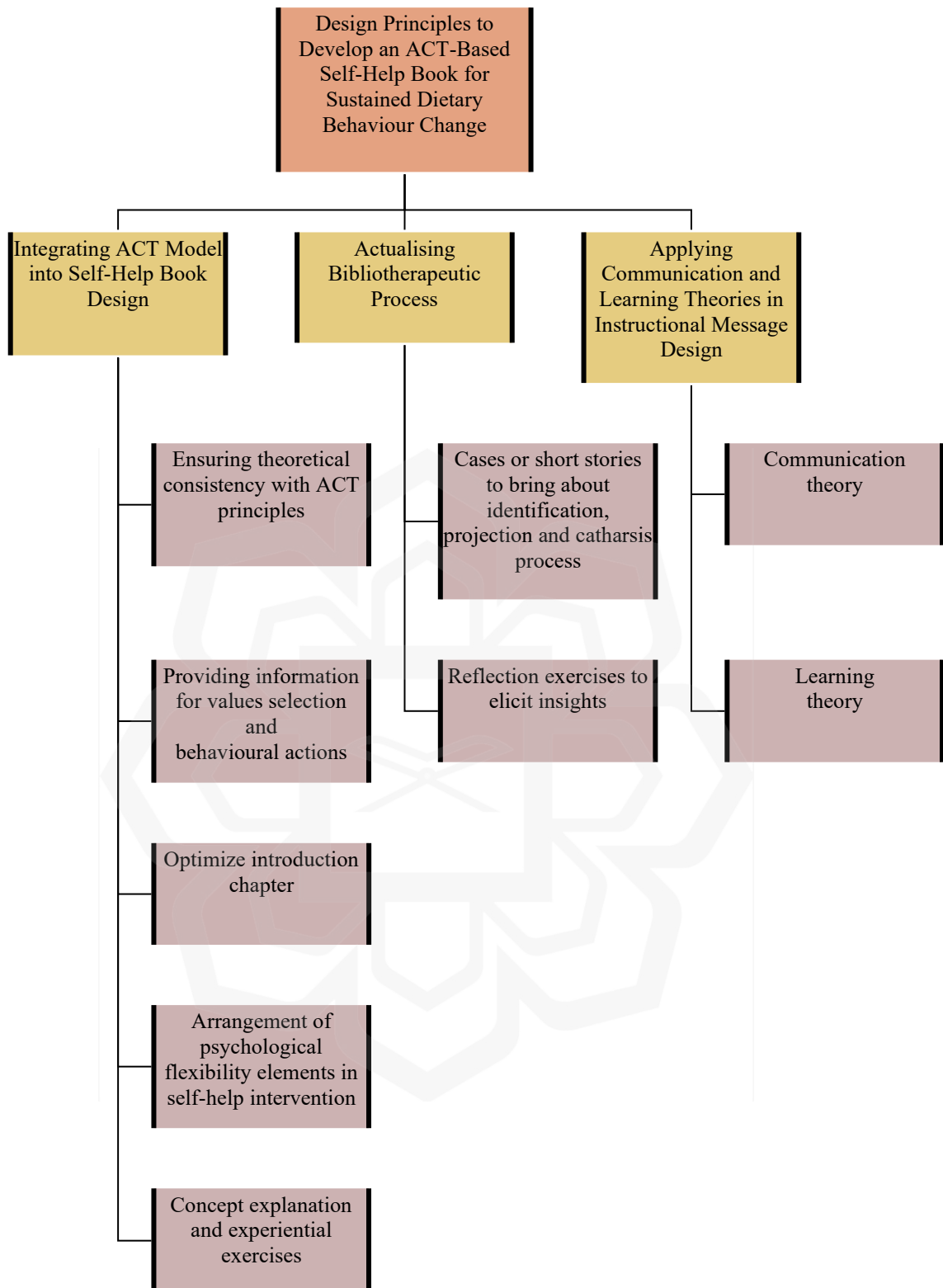


Figure 7.1 Overview of Design Principles

### ***7.3.2.1 Integrating ACT Model into Self-Help Book Design***

#### ***7.3.2.1.1 Ensuring Theoretical Consistency with ACT Principles***

During development phase (prototype 1) in this study, the experts commented to adhere to ACT theory by using words that are consistent with its principle and avoid evaluating the emotion. This comment is similar with the study of Mathialagan and Lau (2023). Examples of nuances that are not consistent with ACT are (1) evaluating the thoughts instead of observing them; and (2) evaluating emotions as positive and negative instead of accepting or making space for the emotions.

Since ACT is a new third wave Cognitive Behavioural Therapy (CBT), most counsellors whom interested in using ACT were previously trained with first or second wave traditional CBT. ACT is using different approach from traditional CBT (Twohig, 2012). For example, in CBT, the client will be taught on how to reframe harmful thoughts using cognitive restructuring but in ACT, a client will learn to observe the thoughts (cognitive defusion) by being mindful before choosing valued eating behaviour (Moffitt et al., 2012). In CBT, the aims are to reduce symptoms but ACT on the other hand put symptom-relief as side effects. Hence, a novice ACT module developer needs to be extra careful not to mix between these two psychotherapy theories.

#### ***7.3.2.1.2 Providing information for values selection and behavioural actions.***

Two elements in the ACT hexaflex require understanding and knowledge: values clarification and committed action. Clients who have not developed clear values may find it hard to understand themselves. At the same time, clients who lack knowledge about healthy eating guidelines may struggle to choose suitable dietary behaviours to commit to. Therefore, as this psychoeducational material is designed for a Malaysian community that is largely Muslim, two types of information were included as support chapters. First, Quranic values were presented, and readers were invited to explore these values and see whether they resonate with them. Second, scientific information about healthy eating was provided to guide readers in choosing appropriate behaviours.

The current literature strongly supports a culturally-responsive adaptation of Acceptance and Commitment Therapy (ACT) to enhance sustained dietary behaviour change, particularly for Muslim clients, by strategically integrating faith-based resources with evidence-based health information. The core mechanism of change in ACT rests upon the client's ability to define and pursue personal values, which function as verbally established, desired life directions, providing the foundational framework for the entire therapeutic process (Barney et al., 2019; Dahl, 2015). Clear, freely chosen values are understood to be necessary to facilitate targeted behavioural change and build psychological flexibility, providing the vital, intrinsic motivation required to engage in difficult, committed actions, such as maintaining a new dietary regimen, even when discomfort arises (Barney et al., 2019; Dahl, 2015). For Muslim clients, integrating curated information is essential because religion often permeates most aspects of life and serves as a foundational element that directs a believer's worldview and moral compass (Adam & Gögen, 2024; Cucchi, 2022).

The synthesis of both Islamic and contextual behavioural science literature reveals that many core ACT concepts are highly aligned with Islamic principles and practices, suggesting a natural and beneficial point of integration (Shah & Shah, 2021). The Quran also contains verses that relate to the ACT hexaflex components (Adam & Gögen, 2024). Islamic virtues such as gratitude and patience have been explored as culturally meaningful pathways to well-being that support a values-based life (Pasha-zaidi et al., 2021). Studies have also shown that integrating evidence-based interventions, such as healthy eating guidance based on national nutrition standards, into Islamic settings is both practical and acceptable (Dogra et al., 2021; Hall et al., 2024). Providing both Islamic values and scientific health guidelines helps create a meaningful framework that feels relevant to clients and prevents discomfort that may occur if only secular information is used (Cucchi, 2022).

Critically, it is essential that counsellors provide this information in a way that respects client autonomy and encourages collaboration. Motivational Interviewing (MI) skills are important here because MI helps clients explore their own motivation for change and supports their confidence in taking action (Dilillo & Smith, 2011). In practice, this means the counsellor does not force or impose personal beliefs or values. Instead, they offer general information from reliable sources such as Quranic content

for spiritual grounding and national nutrition guidelines for health, and then use MI skills to invite the client to explore these materials themselves. This respectful, non-imposing approach ensures that the values clients choose and the actions they commit to are genuinely their own and aligned with both their spiritual identity and health goals (Dilillo & Smith, 2011). Therefore, when working with Muslim clients using a Western model like ACT, providing Islamic input in a thoughtful and collaborative way is not an error but an essential strategy for supporting values clarification and committed action, ultimately strengthening sustained dietary behaviour change.

#### 7.3.2.1.3 Optimize Introduction Chapter

For any self-help resource to effectively transmit complex therapeutic principles like ACT, it must secure the reader's trust and meaningful engagement, a challenge analyzed in the context of health information credibility. Research on communication and information consumption shows that the initial perception of material quality dictates whether a resource is read superficially or deeply (Teplitskiy et al., 2022). When readers perceive a lack of authority, they are more likely to dismiss the content, preventing the deep commitment required for therapeutic change. Credibility, which is a key precursor to sustained engagement, is established through the authority of the author, the overall quality of the content, and a clear layout or design (Sbaffi & Rowley, 2017). Therefore, the introduction chapter must function as a powerful design tool to satisfy these requirements.

The introduction must first act as a signal of scientific status and authority, immediately establishing the book's legitimacy and preventing the material from being subject to superficial reading (Teplitskiy et al., 2022). It must clearly frame ACT as an evidence-based method focused on overcoming experiential avoidance, the human tendency to control uncomfortable thoughts and feelings that ultimately drives dysfunctional eating, rather than a simple diet plan (Hayes et al., 2006).

Second, the introduction serves the vital function of setting realistic expectations. Given that the strongest evidence for ACT is its effectiveness in improving psychological well-being and eating regulation (Iturbe et al., 2022), the introduction must reorient the reader's goal away from singular, outcome-focused weight loss and toward the value-driven action and psychological flexibility that defines the ACT model (Schumacher et al., 2025).

Finally, the introduction must be a clear structural roadmap, outlining the core processes (such as acceptance, defusion, and committed action) in a logical, cohesive manner, mirroring the necessity for a clear layout in effective health communication (Sbaffi & Rowley, 2017). By performing these functions : establishing authority, reframing the problem, and providing structural guidance, the introduction transforms the complex, process-oriented nature of ACT into an accessible, credible, and actionable self-help framework, thus becoming an important design principle for the book's successful adoption.

#### 7.3.2.1.4 Arrangement of Psychological Flexibility Elements in Self-help Intervention

The core processes of Acceptance and Commitment Therapy (ACT) are commonly presented through the Hexaflex, a six-point model of psychological flexibility(Hayes et al., 2012a). To make the model easier to understand and apply, especially in self-help guides, the experts in this study suggest presenting it as the Triflex, a simplified version of Hexaflex (refer Harris, 2019). This approach reduces the amount of new information by grouping the six elements into three main areas: “Be Present” (mindfulness and self-as-context), “Do What Matters” (values and committed action), and “Open Up”(acceptance and defusion; Harris, 2019).This study proposes that, for effective self-help design, the elements should be presented in a specific sequence that allows the skills to build upon one another. The recommended order begins with “Contact with the Present Moment” and “Self-as-Context”, as these provide the basic ability to notice and observe one’s experiences. Next, “Values” and “Committed Action” are introduced to strengthen the reader’s motivation and provide a clear why for engaging with the practices. The final elements are “Cognitive Defusion” and

“Acceptance”, as these concepts are often the most challenging for readers to fully understand.

Research strongly supports beginning with the foundational skills of presence and perspective-taking. A network analysis of the Psychological Flexibility model showed that all six components are essential and work together (Christodoulou et al., 2023). Crucially, this previous study identified “Self-as-Context” (the ability to see your thoughts and feelings from an observing point of view) as the most central component in the entire network structure (Christodoulou et al., 2023). This finding provides scientific support for placing “Contact with the Present Moment” and “Self-as-Context” at the beginning, as they are the key skills that help people step back from their thoughts and feel grounded. This observational skill is a necessary "scaffolding" step for learning the more difficult “acceptance” and “defusion” techniques later on.

The strategic placement of the motivational elements, “Values” and “Committed Action”, as the second stage is important for keeping people engaged in a self-directed program. When people understand what truly matters to them (their values), they are more willing to deal with difficult internal experiences (Keenan et al., 2024). In a qualitative study of an ACT-based self-help book for people with cancer, participants consistently reported that engaging with their values helped them regain a sense of control over their lives (Keenan et al., 2024). By establishing a clear purpose early, the reader has a strong reason to move to the third, most challenging stage: “Cognitive Defusion” and “Acceptance”.

These processes are considered the "trickiest" because they ask people to stop fighting their painful thoughts and feelings, which goes against a lifetime of learned behaviour. The goal of “Cognitive Defusion” is to simply see thoughts as words, not facts, and “Acceptance” is about making space for feelings without trying to change them. By placing these skills last, the intervention ensures the reader has already learned the basic mindfulness and perspective-taking skills (Stage 1) and has a strong sense of purpose (Stage 2) to face these difficult concepts.

#### 7.3.2.1.5 Concept Explanation and Experiential Exercises

The current study recommends educating the readers by firstly explain the concepts using examples and metaphors before inviting them to engage in experiential exercises. This study suggests that before a person tries an ACT exercise, for example learning to accept a difficult feeling, the core idea of “acceptance” must be clearly set up. This means using simple language, examples, and metaphors to show the person a new way to look at their problem, so they don't try to "fix" the feeling. This clear explanation is meant to make them more mentally flexible and ready for the hands-on exercise that follows.

The recommendation to prioritize concept explanation aligns with the theoretical underpinnings and practical applications detailed in the ACT literature. Both Smout (2012) and Podina and David (2018) emphasize that metaphors, stories, and experiential exercises are the fundamental components of ACT psychoeducation. Smout (2012) states that psychoeducation employs all three to illustrate the uncontrollability and acceptability of psychological experience. Furthermore, Podina and David (2018) note that ACT relies on verbal modalities like metaphors and paradoxes to overcome literal language and strengthen the therapeutic alliance.

#### **7.3.2.2 Actualising Bibliotherapeutic Process**

##### 7.3.2.2.1 Cases or Short Stories to Bring about Identification, Projection and Catharsis Process

The findings of this study highlight the important function of curated stories in facilitating identification, projection, and catharsis among readers engaging with the self-help material. The short stories in each chapter supported readers in recognising aspects of their own experiences within the characters, allowing them to identify with the challenges portrayed and project their personal struggles onto the narrative. This sense of relatability was repeatedly described as motivating, as readers felt the stories were relevant, meaningful, and closely aligned with the difficulties they themselves faced, which encouraged them to continue reading and complete the chapter. In addition, the presence of a character who navigates similar obstacles created a sense of

emotional safety, helping readers feel that they were not alone in their journey and enabling a gentle cathartic response through shared understanding. However, the experts emphasised the need to limit the number of characters presented in each chapter to avoid overwhelming the reader's imagination. Keeping the stories concise and focused was viewed as essential to maintaining clarity, preserving psychological engagement, and ensuring that the therapeutic purpose of the narrative which are supporting identification, projection, and emotional release, remained strong and accessible.

The demonstrated capacity for readers to identify with characters and project their struggles onto the narrative directly confirms the importance of universality. This process of identification allows clients to recognize their anxieties and fears and experience a powerful reflection of themselves, which helps normalize sometimes alarming emotional experiences (Stephanie, 2008). By aligning their life experiences with the fictional plight of a character, readers gain relief from self-imposed isolation, demonstrating that they are not incompetent and others have faced similar situations.

The reported experience of a gentle cathartic response confirms the effectiveness of fictional stories in facilitating emotional release. In the context of counselling, the dynamic interaction between a client's emotions and the story allows for the expression of "blocks, fears, wounds, passions, and possibilities" (Stephanie, 2008). Crucially, the stories act as a fictional mirror that externalizes internal processes, making them comprehensible (Stephanie, 2008).

#### 7.3.2.2.2 Reflection Exercises to Elicit Insights

The findings of this study show that the guided reflection exercises in the self-help book helped readers gain self-awareness and insight. By linking what they read to their own lives, they were able to understand themselves better and improve their healthy eating behaviour. This aligns with earlier work in adult education, which highlights how self-help materials can support personal learning and change (McLean, 2013).

Previous studies found that self-help reading is an important form of adult learning (McLean, 2013). Readers often reported learning something meaningful and making changes in areas such as health, relationships, and careers, frequently gaining new insights about themselves and their world (McLean, 2014). McLean (2013) also showed that these benefits arise when readers actively engage with the material, for example by completing exercises or taking notes (McLean, 2014).

The present study reinforces the importance of reflection activities for eliciting insight. This is consistent with research in professional training, which shows that self-reflection increases self-awareness, enhances learning, and deepens insight, especially when using active, engaged methods rather than traditional written formats (Sacco & Amende, 2020). Thus, while earlier studies identified insight as a common outcome of self-help reading, this study demonstrates that guided and structured reflection is a particularly effective mechanism for turning general self-help content into personalised knowledge and meaningful behavioural change, especially in the context of healthy eating.

### ***7.3.2.3 Applying Communication and Learning Theories in Instructional Message Design***

#### ***7.3.2.3.1 Communication Theory in Instructional Design***

The findings of the present study indicate that the Prototype 2 self-help book was perceived as easy to read, largely due to its large font size and short, segmented paragraphs. Participants described the text as resembling leisure reading, which reduced cognitive load and increased their willingness to engage with the material. This feedback underscores the importance of linear instructional design: readers preferred a layout that guided them step-by-step, especially in the absence of a therapist or counsellor. The findings also reveal that worksheets originally developed for use in counselling sessions were not always easy to comprehend when completed independently, suggesting that instructional clarity and stand-alone usability must be strengthened. Additionally, several participants reported difficulty performing the visualisation exercises without support. This points to the need for multimodal

instructional aids; for example, embedding QR codes linked to audio guides may enhance comprehension and facilitate more effective engagement with the visualisation activities.

The positive feedback regarding the big font and short paragraphs directly aligns with the the principles of text design, a central component of instructional message design (Grabowski, 1995). It emphasize that typography and layout affect how information is initially attended to and perceived by the learner (Grabowski, 1995). The perception of the book as "leisure reading" suggests the design successfully reduced the perceived effort, supporting the principle that simple formatting, such as using short sentences, enhances comprehension (Hartley, 1985, as cited in Grabowski, 1995). This reduction of intrinsic cognitive load is a foundational concern in message design, which seeks to optimize instructional communication (Bishop, 2014).

The request for a linear instructional design to support independent comprehension highlights a tension between contemporary, constructivist-oriented designs and the need for clearer message transmission. Instructional message design has long been influenced by early transmission-based communication models (Bishop, 2014), such as the Shannon and Weaver model (1949, as cited in Richey et al., 2011a), which conceptualises communication as the source (designer) sending a clear and accurate message to the destination (learner). The original design worked effectively only when a counsellor was present, suggesting it relied on interactional or transactional communication processes where the shared "field of experience" between sender and receiver supports message decoding (Richey et al., 2011a). Without the counsellor, however, the book becomes a purely self-instructional tool and therefore requires a more explicit and structured layout. The finding that worksheets were difficult to complete independently indicates a breakdown in the message treatment and code structure, which could not function without the human source (Berlo, 1960, as cited in Bishop, 2014). Participants' preference for a "linear design" reflects a shift towards a more behavioural or transmission-based approach, where a clear and orderly structure helps ensure the intended meaning is conveyed and reduces noise caused by confusing layouts or ambiguous instructions (Richey et al., 2011a).

#### 7.3.2.3.2 Learning Theory in Instructional Design

The findings emphasize the importance of applying learning theory principles in the development of a self-help book. Participants noted that several chapters in the prototype felt disconnected, particularly where the chapter on values and committed action did not clearly build on earlier content such as mindful eating decisions. From a learning theory perspective, this reflects a gap in sequencing and scaffolding, where prior knowledge should be explicitly linked to new material to support cumulative skill development rather than presenting concepts as isolated segments. Effective instructional design requires the author to help readers integrate previously learned strategies so that learning progresses coherently across chapters. Additionally, the findings highlight the central role of learner motivation. When the purpose or rationale of an activity is not made explicit, readers may struggle to recognise its relevance to their personal needs and goals, reducing engagement. Therefore, making the rationale transparent is essential for fostering meaningful participation and supporting self-directed learning within a self-help context.

Cognitive learning theory highlights the importance of instructional design in creating materials that present an inherent order and organisation to support accurate memory formation. The current study showed that the prototype failed to structure the material in a way that aligns with how knowledge should be organised in the reader's memory (Richey et al., 2011b). Effective design requires messages that promote organisation, integration, and translation processes essential for retention and retrieval. The observed disconnect violates the principle that effective learning progresses coherently by linking prior knowledge to new material (Grabowski, 1995).

In a self-help context, where the reader is self-directed, the instructional message must supply the motivation and relevance that an instructor would typically provide. The lack of a transparent rationale is a failure to address the learner's needs and goals (Grabowski, 1995). Self-help relies on self-directed learning. Hence, the instructional material must bridge the gap between abstract concepts and the reader's personal needs and goals (Grabowski, 1995). Making the rationale explicit transforms an opaque task into a meaningful, goal-oriented action, maintaining the high level of learner motivation required for long-term behavioral change. The design must

explicitly answer the learner's implicit question: "Why am I doing this and how does it help me?"

#### ***7.3.2.4 Revised Design Principles***

The revised design principles to develop ACT-based bibliotherapy module are illustrated in table 7.1. Changes are made based on the conclusions and implication of the present study.



Table 7.1 Revised design principles to develop ACT-based bibliotherapy module for sustained dietary behaviour change

No.	Theories	Main design principles		Elaboration of principles	
1	Acceptance and Commitment Therapy	1.1	Optimize introduction chapter.	1.1.1	The author may consider to start with concept of valued living <ul style="list-style-type: none"> <li>• Explain the benefit of valued living and the negative consequences of struggling with experiential avoidance.</li> <li>• The key to sustained behavioural change is to link the new behaviour with motivational values</li> </ul>
				1.1.2	Introduce the concept of psychological flexibility in Acceptance and Commitment Therapy. <ul style="list-style-type: none"> <li>• Include citation and reference to get trust from the readers.</li> <li>• Provide evidenced-based outcome from intervention that use ACT.</li> </ul>
		1.2	Structure and arrange the six elements of psychological flexibility wisely.	1.2.1	The author may consider to start with “contact with present moment” and “self-compassion (self-as-context)”
				1.2.2	After explaining “values clarification” concept, it can be followed with the “committed action” concept.
				1.2.3	Provide the readers with “cognitive defusion” and “acceptance” skill after “Committed action” concept. <ul style="list-style-type: none"> <li>• Explain “experiential avoidance” and “creative hopelessness” first before introducing the concept of “acceptance”</li> <li>• Introduce concept via identifying patterns of experiential avoidance and their costs.</li> </ul>
				1.2.4	A novice writer may consider present the six elements of psychological flexibility using triflex instead of hexaflex.
		1.3	For every psychological	1.3.1	Explain concepts using :

			flexibility elements, provide: <ul style="list-style-type: none"> <li>• Elaboration of its concept</li> <li>• Experiential exercise</li> </ul>		<ul style="list-style-type: none"> <li>• Articles</li> <li>• Metaphor</li> </ul>
				1.3.2	Experiential exercises include : <ul style="list-style-type: none"> <li>• Behavioural exercises</li> <li>• Reflections</li> </ul>
		1.4	Where relevant, provide context to avoid inaccurate generalisation	1.4.1	Provide the context of in-session dialogue between a counsellor and a client
2	Bibliotherapy mechanisms	2.1	Curate content that allow the process of identification, projection, catharsis and gaining insight to occur	2.1.1	Include relevant short stories to bring about identification, projection and catharsis process. <ul style="list-style-type: none"> <li>• Evaluate the stories (e.g via peer-review) to ensure they are not judgmental.</li> <li>• Limit number of characters (e.g not more than two) to avoid information overload.</li> </ul>
				2.1.2	Provide reflection exercises to elicit insights.
3	Theories in instructional message design	3.1	Apply communication theory in instructional design	3.1.1	Design the layout using guidelines of text designs <ul style="list-style-type: none"> <li>• Page, type size, typeface, spacing, capitalization</li> </ul>
				3.1.2	Write organized messages which are in orderly state, rich in pattern and structure, highly interconnected and containing a good deal of redundancy.
				3.1.3	Manage information load. <ul style="list-style-type: none"> <li>• Avoid jargon words</li> <li>• Eliminate “noise” that hinder understanding.</li> <li>• Provide adequate examples for new concepts that may be hard to understand.</li> </ul>

			3.1.4	Use cueing techniques. <ul style="list-style-type: none"> <li>• Cue the receiver to the important parts of printed messages using typographical cues such as bold face, side headings, illustrations and white space.</li> </ul>
			3.1.5	Use content-generated attention. <ul style="list-style-type: none"> <li>• Connect information from previous chapter to the next chapter. Learners pay more attention to familiar material . This reduce the cognitive load and minimize the stress of working memory.</li> </ul>
	3.2	Apply learning theory in instructional design	3.2.1	Behavioural objectives <ul style="list-style-type: none"> <li>• Write precise objectives in measurable terms that describe what learners expected to do after reading the self-help book</li> </ul>
			3.2.2	Exercises <ul style="list-style-type: none"> <li>• Provide relevant exercise to help readers practise the skill</li> </ul>
			3.2.3	Rehearsal <ul style="list-style-type: none"> <li>• Repeating key points, predicting and restating, reviewing and summarizing</li> </ul>
			3.2.4	Mnemonics <ul style="list-style-type: none"> <li>• Where relevant, provide mnemonics to assist information storage and retrieval</li> </ul>

### **7.3.3 The Practicality of the Developed ACT-based Bibliotherapy Module (Making peace with diet) for Sustained Dietary Behaviour Change**

The aim of this study is to assess the practicality of the developed bibliotherapy module in enhancing psychological flexibility, with the goal of promoting sustained dietary behaviour change. The findings suggest that the book is practical in general, as the content can easily be understood without guidance of helping professionals and most participants were motivated to read all chapters. It is also effective in delivering information about psychological flexibility and at the same time promote ACT processes changes among the participants. These process changes influenced participants' eating behavioural changes such as cutting sweetened beverages intake, increasing vegetables intake and controlling portion size.

All participants from this study reported good comprehension of the book as well as motivated to complete reading all chapters due to mentioned strengths of the book (refer 6.4.1.2). It is encouraging to compare this findings with that found by Potts and colleagues (2022) who found that participants rated high satisfaction and engagement with the ACT self-help book (Lillis et al., 2014) for dietary behaviour change. From the change interview, all participants reported improvement on at least one ACT-specific process after reading the developed self-help book (*Making peace with diet*). This findings on effectiveness of using ACT-based self-help book for dietary behavioural change is in agreement with Jink's (2016) which showed at least one ACT-specific process achieved both reliable and clinically significant change after reading "The Diet Trap" (Lillis et al., 2014) self-help book.

The book successfully motivates participants to complete their reading. One of the motivational factor is the fact that the bibliotherapy mechanisms such as identification, catharsis and insight (Silverberg, 2003) has occurred through many short stories of two characters in the book namely Nurul and Shahrul. The dialogue between counsellor and client in the book had also gave the participants identification and catharsis experience through problem identification and achieving emotional release. The exercises and activities such as reflections, further help the participants gain insight and spark new perspectives towards private internal experiences. This positive outcome is achieved because the participants' took the path of mechanisms of change in bibliotherapeutic process (Silverberg, 2003). The sense of relatability to

their personal challenges, influenced the participants to explore and practice the strategies for improving psychological flexibility provided in the book.

Experiential exercises are one of the main elements of the book design. This application of behavioural learning theory in instructional design are seen as helpful among the participants because those exercises influence readers to practise what they have learnt. Since the book majorly promote behavioural objectives, it is important to ensure that the readers have sufficient chances to practice as they learnt (Richey et al., 2011b).

One of the questions asked by the participants is how should she make eating decision when she is practising cognitive defusion technique. This particular question had actually revealed the weakness of the book in which the content of a chapter does not link with previous chapter. There is a lack of “rehearsal” if we look it from cognitive learning theory perspective. To apply cognitive learning theory in instructional design, besides organizing the lesson through message design strategies, “rehearsal” should also be taken into consideration. The purpose of "rehearsal" is to connect learners' existing experiences and knowledge with new information in their working memory (Richey et al., 2011b). This can be improved by repeating key points, predicting and restating, reviewing and summarizing. The author of the book may include skill practise of previous chapter into the checkbox list of the next chapter as well. The context of the provided exercises should also include the skills being taught in the previous chapter of the book.

The participants suggested to improve layout design regarding the attention-getting properties of messages such as cueing techniques and content-generated attention. These application of communication theory in instructional design aimed to ensure the message delivered by the author are received by the reader. The participant mentioned that even though there is usage of acronym to assist memorization of some input such as SMART and TEAM, these acronym were not highlighted so she almost missed it. One of the participants also value the analogies given as they helped her to understand the concept. However, this analogy was not cued as it is simply presented in paragraph. Typographical cueing techniques can be optimized by using bold face or

very large type (Richey et al., 2011a). Alternatively, different typeface, labelling, side headings and illustrations could also help gain learner's attention.

#### **7.4 LIMITATION OF THE STUDY**

This study employs a Type 1 Design and Development Research (DDR) approach that is context-specific. It focuses on addressing a unique issue within a selected context. Hence, the findings are not intended for generalisation but aim to provide in-depth understanding and contextual insights. However, the findings may be moderately generalised to other populations, provided that the settings and characteristics are similar to those of this study.

The study's rigor regarding external application is established through transferability and analytical generalisability. Transferability is enabled by providing description of the specific context namely the experiences of overweight or obese young adult females and the design principles of the developed module. This detail allows external readers such as educators, dietitians or researchers to judge the applicability of the findings and the developed book to their own unique contexts.

Furthermore, the nature of this study allows for analytical generalisability, meaning the insights derived from the design process can be used to build upon or refine existing theory in areas like eating behaviour and instructional design, extending the intellectual contribution beyond the specific product itself. This study is thus limited in its breadth of generalisation but robust in its ability to generate contextually relevant and practically transferable knowledge.

#### **7.5 RESEARCH IMPLICATION AND CONTRIBUTION**

##### **7.5.1 Implication**

This research has significant implications for various sectors including higher learning institutions, the Ministry of Health and the Ministry of Education. This study contributes to the understanding of psychoeducation and counselling that empower

individuals to make long-term dietary changes, aligning with national health promotion and educational goals.

For higher learning institutions, the findings of this study may provide valuable insights for development of curriculum content in dietetics or nutrition education programs. Universities may incorporate inputs from the study into nutritional counselling course for dietary behavioural change. Current curriculum that offer only one counselling subject throughout four-year undergraduate study in dietetics field may not be enough to empower students with counselling skill. Perhaps, a two-year master's program specializing in nutritional counselling could provide dietitians and nutritionists with the necessary counselling skills to more effectively support their clients.

The research findings call for multi-disciplinary approach in tackling overweight and obesity issue in Malaysia. It is important to include counsellors or clinical psychologists in weight management programs. This is due to the fact that the issue involves not only calories and nutrients but also the psychological aspects of habit change. In cases where counsellors or clinical psychologist not available to be in the team, the developed self-help book can function as psychoeducational tool. In this context, the dietitians and nutritionists may play their role as guide that assist their patients in bibliotherapy program for dietary behavioural change.

The Ministry of Health (MOH) can also utilize the developed self-help book as part of its national initiatives to tackle the rising rates of non-communicable diseases which are often linked to poor dietary habits. The MOH can utilize the product of this study by integrating this tool into community health programs and health promotion campaigns as an accessible, low-cost solution to improve dietary behaviours. This bibliotherapy module, grounded in behavioural science, offers a sustainable intervention that complements existing healthcare strategies. This may potentially reduce the burden on the healthcare system by promoting preventive health measures.

For the Department of Islamic Development Malaysia (popularly known as JAKIM) that administers Islamic affairs in Malaysia, can utilize the self-help book to align with values of eating as an act of worship and gratitude. One of the main practical implications of this research is that, it motivates a believer to not only concern with permissible or lawful (“halal”) food but also “tayyib” food which means pure, wholesome or good. The department has made significant efforts to certify the halal status of products, making it easier for the Malaysian community to consume halal food. Now, it is time for the department to take further steps in fostering a society that practices not only halal but also *tayyib* (wholesome) eating. For example, the ministry may collaborate with religious leaders and institutions to support community-based programs that encourage balanced diets as part of a wholesome, ethical life in line with religious teachings.

In sum, the implications of this study extend across key sectors in Malaysia, offering a multi-faceted approach to addressing dietary behaviour through self-help resources. The collaboration between these ministries can enhance the collective impact of health promotion efforts, ensuring the development of a healthier, more informed society.

### **7.5.2 Contribution**

This study offers contributions in three areas: theoretical, methodological, and practical applications.

This study demonstrates the integration of psychotherapy theory, bibliotherapy theory, and related instructional design theories (communication theory and learning theory) in designing a psychoeducational self-help book for sustained dietary behaviour change. By combining these frameworks, the study provides a philosophical and practical basis for applying Acceptance and Commitment Therapy (ACT) in self-help interventions. From this integration, the researcher proposes revised design principles for a validated and practical ACT-based self-help book, offering new guidance for counselling practice and advancing the theoretical

understanding of how integrated approaches can facilitate sustainable behavioural change.

With regards to methodological contribution, this study apply Design and Developmental Research in psychoeducation specifically in eating behaviour context. Previous study focus on evaluating the developed module or self-help book without explaining the process behind developing the module. This study, however explain all the systematic process in developing a bibliotherapy module. It contributes to the literature by offering the specific formative evaluation for each phase of ADDIE.

Application wise, this study contribute a bibliotherapy module in the form of a self-help book for sustained dietary behaviour change for Malay-speaking population. Non-helping professionals such as dietitians, nutritionists or doctors may guide their overweight or obese patients using the module as a bibliotherapy program even though they are not trained with counselling skills.

## **7.6 RECOMMENDATION FOR FUTURE STUDIES**

There are several recommendations for future researchers to explore in further studies. First, since this study is limited to designing and developing a module to sustained dietary behavioural change, future researchers may conduct a longitudinal study to see the effectiveness of the module at three month, six month and twelve month follow up. Only then can it be proven that the module, developed based on evidence from the literature, is significant in influencing overweight or obese individuals to sustain healthier eating behaviour changes.

The second direction is to consider the design of the book. More features such as audio or videos may be added by using QR code in the book to assist readers' comprehension of the concept. For example, instead of practising visualization activity by reading the instruction, learners can practise it by listening to the author's audio or video.

Future research could also reconsider to digitalize the content of the self-help book. Reading a book is not the chosen mode of therapy for everyone. Thus, a mobile apps of the self-help module may cater another group of people who are not interested in reading a book. Furthermore, digital platform have extra advantages as compared to a book as digital platform can offer feedback to the users.

## **7.7 CONCLUSION**

This chapter has provided a summary of the study in terms of its aim, research findings, research objectives, discussions, implication, contribution and recommendations for further research. This study is an attempt to design and develop a bibliotherapy module for sustained dietary behaviour change. For this purpose, Acceptance and Commitment Therapy theory was chosen as the main modality to assist readers' behavioural change.

In order to design a practical book that is effective in delivering the message, bibliotherapy therapeutic process, learning theory and communication theory were also take into account in designing the module. The findings from the study suggest that a psychological intervention through self-administered ACT bibliotherapy module without therapeutic support from helping professionals can improve the psychological flexibility of overweight or obese community.

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## APPENDIX A

### LETTER OF APPOINTMENT

Department of Educational Psychology and Counselling  
Kulliyah of Education  
International Islamic University Malaysia  
53100, Gombak  
Selangor  
Malaysia

Prof Michael E. Levin,  
Department of Psychology,  
Utah State University,  
2810 Old Main Hill  
Logan, UT 84322

12 August 2021

Dear Prof,  
**APPOINTMENT AS EVALUATOR FOR RESEARCH CONSTRUCT AND INSTRUMENT VALIDITY.**

The above title is referred,  
It is our pleasure to invite you, Prof Michael E. Levin to be the evaluator for research construct and instrument validity to the following doctoral student at the Department of Educational Psychology and Counseling, IIUM.

Name : Ayat Binti Ibrahim  
Program : Doctor of Philosophy (Education) – G1711430  
Research title : Integrating Acceptance and Commitment Therapy in developing a bibliotherapy module for sustained dietary behaviour change.  
Supervisors : Asst. Prof Dr Haniza Rais (Main supervisor)  
Prof. Dr. Muhammad Sabri Bin Sahrir  
Assoc. Prof Dr. Joharry B. Othman

For your information, the referred student is currently doing a research about eating behaviour and Acceptance & Commitment Therapy (ACT) which is known to be your expertise. Hence, your feedback is valuable to ensure the validity of her research construct and instrument.

Enclosed with this letter is the instrument.

Thank you.

Yours sincerely,

.....  
Asst. Prof Dr. Haniza Rais  
Department of Educational Psychology and Counseling  
Kulliyah of Education

**Instrument validation form for content experts.**

**Analysis phase of DDR**

Based on the scoring below, kindly rate each interview question/ survey questions accordingly.

Scoring	
1	Not acceptable/ Not suitable
2	Below expectations (some modification needed)
3	Meets expectations (no modifications needed but could be improved)
4	Exceeds expectations (no modification needed)

Research objective (RO) and research question (RQ)	Methods of gathering data	Informants/ Participants	Expected data	Interview question (IQ)	Scoring				Comments / remarks
					1	2	3	4	
RO 1 : To analyse the needs of developing a value-based self-help book for sustained dietary behaviour change.  RQ 1.1 To what extent the overweight and obese able to sustain dietary behaviour change	Interview	Overweight or obese young adult females who had tried losing weight previously but fail to sustain.	Methods to change eating behaviour	1. What are the methods or helps have you sought to lose weight?					
			Behaviour change after intervention.	2. What are the behaviour changes that occur after you attended any weight management intervention previously?					
			Duration of sustainment of eating behaviour change.	3. If you change your eating behaviour after the intervention, how long does it sustain?					
			Participants level of commitment to change eating behaviour.	4. How willing are you to change your eating habits now (Scale 1-5)? Why do					

after intervention for weight management?				you choose that scale?				
<p>RO 1 : To analyse the needs of developing a value-based self-help book for sustained dietary behaviour change.</p> <p>RQ 1.3 What are the barriers or challenges for overweight or obese people to sustain dietary behaviour change?</p>	Interview	Overweight or obese young adult females who had tried losing weight previously but fail to sustain.	Weight self-stigma	1. What does your weight mean to you? Are there situations you avoid due to your weight? Have you ever been discriminated against due to your weight?				
			Challenges for weight maintenance.	2. What are your challenges to lose weight and maintain its' loses?				
			Basis of decision making (is it value-based)	3. How do you make decision on what to eat?				
			Evidence of unworkable experiential avoidance	4. How willing are you to experience negative thoughts, negative emotions and uncomfortable physical sensation related to this goal?				
			Participants' level of commitment towards goal	5. What is your most difficult goal-related tasks and how was your usual respond towards it?				
			Participants' perception of benefits or disadvantages of having a self-help book for sustained dietary behaviour.	6. What is your opinion about having a self-help book to assist you through your losing weight agenda?				

Additional remarks by the expert:

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**Validated by**

Name:

Faculty / University:

Date:

Official Stamp and signature



## APPENDIX B

### LETTER OF APPOINTMENT

Department of Educational Psychology and Counseling  
Kulliyah of Education  
International Islamic University Malaysia  
53100, Gombak  
Selangor  
Malaysia

Associate Professor Dr. Nurazan Mohmad Rouyan  
Fakulti Bahasa dan Komunikasi  
Universiti Sultan Zainal Abidin,  
Terengganu,  
Malaysia.

11 April 2023

Dear Associate Prof,

#### **APPOINTMENT AS EVALUATOR FOR RESEARCH CONSTRUCT AND INSTRUMENT VALIDITY.**

The above title is referred,

It is our pleasure to invite you, Assoc. Prof Dr Nurazan Mohmad Rouyan, to be the evaluator for research construct and instrument validity to the following doctoral student at the Department of Educational Psychology and Counseling, IIUM.

Name : Ayat Binti Ibrahim  
Program : Doctor of Philosophy (Education) – G1711430  
Research title : Integrating Acceptance and Commitment Therapy in developing a value-based bibliotherapy module for sustained dietary behaviour change.  
Supervisors : Asst. Prof Dr Haniza Rais (Main supervisor)  
Prof. Dr. Muhammad Sabri Bin Sahrir

For your information, the referred student is currently doing a Design and Developmental Research that employ qualitative method which is known to be your expertise. Hence, your feedback is valuable to ensure the validity of her research construct and instrument.

Thank you.

Yours sincerely,

.....

Assoc. Prof Dr. Haniza Rais  
Department of Educational Psychology and Counseling  
Kulliyah of Education

**Instrument validation form for content experts**

**Development phase of Design and Development Research**

Based on the scoring below, kindly rate each interview questions accordingly.

Scoring	
1	Not acceptable/ Not suitable
2	Below expectations (some modification needed)
3	Meets expectations (no modifications needed but could be improved)
4	Exceeds expectations (no modification needed)

Research objective (RO) and research question (RQ)	Methods of gathering data	Informants	Expected data	Interview question (IQ)	Scoring				Comments / remarks
					1	2	3	4	
RO 2: To develop a validated Quranic value-based bibliotherapy module for sustained dietary behaviour change  RQ 2.3: How can psychological flexibility elements identified as necessary by the	Interview	Counsellors who had been practicing Acceptance and Commitment Therapy (ACT) for at least 5 years	The prototype level of content accuracy (Content validity)	- What is your opinion about the content's accuracy?					
			The prototype level of content thoroughness or extensiveness. (Content validity)	- What is your opinion about content? Is it thorough/extensive enough? a) Any important information missing? b) Is the content up-to-date?					
			The prototype quality in terms of meeting the module objectives (Construct validity)	- Based on your experience as a counsellor with knowledge in ACT, do you think the module will be effective in helping readers to improve their psychological flexibility? a) What is your opinion with regard to chapter 1 that aims to introduce					

<p>needs analysis be incorporated into the module?</p>				<p>readers with the concept of psychological flexibility?</p> <ul style="list-style-type: none"> <li>b) What is your opinion with regard to chapter 2 that aims to train readers with “Contact with present moment” skill?</li> <li>c) What is your opinion with regard to chapter 3 that aims to train readers with “Cognitive defusion” skill?</li> <li>d) What is your opinion with regard to chapter 4 that aims to train readers with “Clarification of values” skill?</li> <li>e) What is your opinion with regards to chapter 5 that aims to train readers with “Acceptance” skill?</li> <li>f) What is your opinion with regard to chapter 6 that aims to train readers with “Self-as-context” skill?</li> <li>g) What is your opinion with regard to chapter 7 that aims to train readers with “Commitment” skill?</li> <li>h) What is your opinion with regard to chapter 8 that summarize the content of the book and end the week-by-week skills transfer?</li> <li>i) What is your opinion with regard to chapter 9 that provide information about values from the</li> </ul>					
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				Quran and principles of healthy eating?					
			The prototype expected practicality or usability.	<ul style="list-style-type: none"> <li>- What is your opinion about the clarity of the content?               <ul style="list-style-type: none"> <li>a) Are the instructions clear?</li> <li>b) Any part that you find helpful, easy to use or interesting?</li> <li>c) Would the readers able to understand the content easily?</li> </ul> </li> <li>- What is your opinion about any deficiencies in learning effectiveness?               <ul style="list-style-type: none"> <li>a) Any part of the book that you find uninteresting?</li> <li>b) What is your perception about the readers' motivation to learn from the book?</li> </ul> </li> <li>- What is your opinion about the book's ease of use?               <ul style="list-style-type: none"> <li>a) Do you think you would be able to use it in your counseling setting?</li> <li>b) Do you want to use it? If not, why?</li> </ul> </li> </ul>					
			Revision points for improvement	Given/Provided that you are to change one thing in the module; <ul style="list-style-type: none"> <li>- What would it be?</li> <li>- How would you do it?</li> </ul>					

Additional remarks by the expert:

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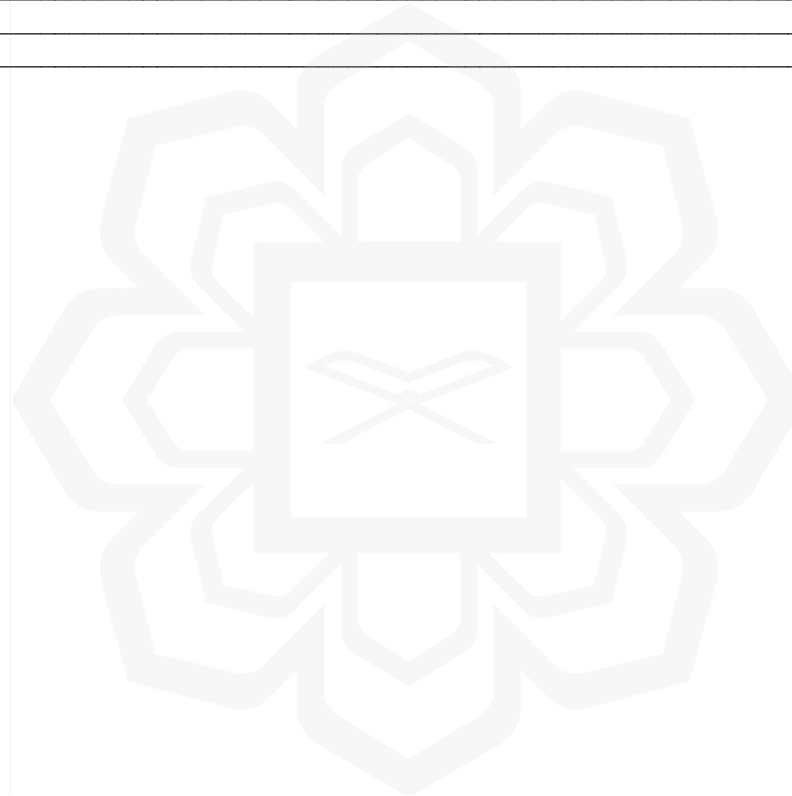
**Validated by**

Name:

Faculty / University:

Date:

Official Stamp and signature



## APPENDIX C

### OPEN-ENDED QUESTIONS

**Open-ended questions for expert reviews among Quran & sunnah lecturer and Dietetics.**

Table 9.1 Open-ended questions for lecturer of Islamic Revealed Knowledge

Issue & Central phenomenon	Purpose statement	Central research question	Research questions	Open-ended questions	Expected data
<p>Issue: Overweight and obesity among female young adults (university students)</p> <p>Central phenomenon: The eating behaviour of overweight</p>	<p>To get feedbacks and expert reviews on developed prototype 1 which aimed to help readers sustain dietary behaviour change.</p>	<p>What are the components needed to develop a value-based self-help book for sustained dietary behaviour change?</p>	<p>RQ 2.2 How can psychological flexibility elements identified as necessary by the needs analysis be incorporated into the module?</p>	<p>1. What is your opinion about the content's accuracy?</p>	<p>Content accuracy</p>
				<p>2. What is your opinion about the content? Is it thorough/ extensive enough?</p> <p>a) Any important information missing?</p> <p>b) Is the content up-to-date?</p>	<p>The extensiveness of developed module prototype.</p>
				<p>3. Based on your experience as a lecturer in Qur'anic study, do you think the module will be effective in helping readers to improve their understanding about Quranic values?</p> <p>a) What is your opinion on subtopic "<i>Lensa wahyu (LW) 1: Agar dicintai Tuhan</i>" which aim to make the reader</p>	<ul style="list-style-type: none"> <li>• Content accuracy (content validity)</li> <li>• Quality of module in terms of meeting its objectives.</li> <li>• The module's coherence and cohesion (construct</li> </ul>

or obese students in tertiary education.				<p>value the love of Allah?</p> <p>b) What is your opinion on subtopic “<i>LW 2: Rebut peluang membuktikan iman</i>” which aim to motivate the reader value their faith?</p> <p>c) What is your opinion on subtopic “<i>LW 3: Memelihara nikmat yang Dia kurniakan kerana syukur</i>” which aim to motivate the reader value gratefulness to Allah s.w.t?</p> <p>d) What is your opinion on subtopic “<i>LW 4: Mulia dengan mengabdikan hanya kepadaNya</i>” which aim to motivate the reader value the recognition of becoming Allah’s servant?</p>	validity)
				<p>4. What is your opinion about the clarity of the content?</p> <p>a) Are the instructions clear?</p> <p>b) Would the readers able to understand?</p>	Content clarity
				<p>5. Given that you are to change one thing in the module,</p> <p>a) What would it be?</p> <p>b) How would you do it?</p>	Revision points for improvement

Table 9.2 Open-ended questions for dietetics lecturer

Issue & Central phenomenon	Purpose statement	Central research question	Research questions	Open-ended questions	Expected data
<p>Issue: Overweight and obesity among female young adults (university students)</p> <p>Central phenomenon: The eating behaviour of overweight or obese students in tertiary education.</p>	<p>To get feedbacks and expert reviews on developed prototype 1 which aimed to help readers sustain dietary behaviour change.</p>	<p>What are the components needed to develop a value-based self-help book for sustained dietary behaviour change?</p>	<p>RQ 2.2 How can psychological flexibility elements identified as necessary by the needs analysis be incorporated into the module?</p>	<p>1. What is your opinion about the content's accuracy?</p>	<p>Content accuracy</p>
				<p>2. What is your opinion about the content? Is it thorough/ extensive enough? a) Any important information missing? b) Is the content up-to-date?</p>	<p>The extensiveness of developed module prototype.</p>
				<p>3. Based on your experience as a lecturer in dietetics, do you think the module will be effective in helping readers to improve their understanding about healthy eating behaviour? a) What is your opinion on subtopic "<i>Jaga waktu makan</i>" which aim help the reader understand the importance of meal time? b) What is your opinion on subtopic "<i>Jaga kualiti makanan</i>" which aim to make the reader motivated to make good quality of food choice? c) What is your opinion on subtopic "<i>Jaga kuantiti makanan</i>" which aim to make the reader motivated to eat with right portion size as needed?</p>	<ul style="list-style-type: none"> <li>• Content accuracy (content validity)</li> <li>• Quality of module in terms of meeting its objectives.</li> <li>• The module's coherence and cohesion (construct validity)</li> </ul>
				<p>4. What is your opinion about the clarity of the content? a) Are the instructions clear?</p>	<p>Content clarity</p>

				b) Would the readers able to understand?	
				5. Given that you are to change one thing in the module, a) What would it be? b) How would you do it?	Revision points for improvement



## APPENDIX D

### ACCEPTANCE AND ACTION QUESTIONNAIRE-WEIGHT RELATED (AAQ-W)

Below you will find a list of statements. ***Please rate the truth of each statement as it applies to you.*** Use the following scale to make your choice.

1	2	3	4	5	6	7
Never true	Very seldom true	Seldom true	Sometimes true	Frequently true	Almost always true	Always true

1	It's OK to feel fat	1	2	3	4	5	6	7
2	When I have negative feelings, I use food to make myself feel better	1	2	3	4	5	6	7
3	I try to suppress thoughts and feelings that I don't like about my body or weight by just not thinking them	1	2	3	4	5	6	7
4	I am not in control of what I eat	1	2	3	4	5	6	7
5	I try hard to avoid feeling bad about my weight or how I look	1	2	3	4	5	6	7
6	I am in control of how much physical activity I do	1	2	3	4	5	6	7
7	When I evaluate my weight or my appearance negatively, I am able to recognize that this is just a reaction, not an objective fact.	1	2	3	4	5	6	7
8	In order to eat well and do physical activity, I need to feel like it	1	2	3	4	5	6	7
9	I need to feel better about how I look in order to live the life I want to	1	2	3	4	5	6	7
10	Other people make it hard for me to accept myself	1	2	3	4	5	6	7

Imagine that the following thoughts occurred to you right now. ***How valid or believable would each be?***

For each question, please circle a number from 1 through 7.

1	2	3	4	5	6	7
Not at all believable						Completely believable

11	If I'm overweight, I can't live the life I want to	1	2	3	4	5	6	7
12	If I feel unattractive, there is no point in trying to be intimate	1	2	3	4	5	6	7
13	If I gain weight, that means I have failed	1	2	3	4	5	6	7
14	I'm in control of my eating behaviour	1	2	3	4	5	6	7
15	I don't have what it takes to be healthy for life	1	2	3	4	5	6	7
16	My eating urges control me	1	2	3	4	5	6	7
17	I need to get rid of my eating urges to eat better	1	2	3	4	5	6	7
18	I am a stable person	1	2	3	4	5	6	7
19	If I eat something bad, the whole day is a waste	1	2	3	4	5	6	7
20	I should be ashamed of my body	1	2	3	4	5	6	7
21	I need to avoid social situations where people might judge me	1	2	3	4	5	6	7
22	I will always be overweight	1	2	3	4	5	6	7

#### Scoring Information for the AAQ-W:

Before a sum score is taken, items 1, 6, 7, 14, and 18 are reverse scored. Lower scores indicate less experiential avoidance and more psychological flexibility. The range of possible scores is 22 to 154.

Because it can be confusing to speak of a lower score reflecting “more psychological flexibility” the scoring can be changed if the clinician or user is conceptually focused on increasing acceptance and response flexibility. In this case, items 1, 6, 7, 14, and 18 would be scored as normally and all other items would be reverse scored.

#### Psychometrics summary:

“The AAQW shows good internal consistency ( $\alpha=.88$ ), indicating promise for future application in studies related to weight control. It correlated in a coherent way with weight related self-report measures, including obesity-related quality of life, bingeing, and exercise, and with objectively measured body mass. It also correlated psychological distress which comports with previous research on the psychological impact of avoidance and inflexibility (Hayes et al., 1996; Hayes et al., 2004).”

From the AAQ-W validation study:

Lillis, J., & Hayes, S.C. (2008). Measuring avoidance and inflexibility in weight related problems. *International Journal of Behavioural Consultation and Therapy*, 4(4), 348-354.

## APPENDIX E

### LETTER OF APPOINTMENT (TO REVIEW DESIGN PRINCIPLES)

Department of Educational Psychology and Counseling  
Kulliyah of Education  
International Islamic University Malaysia  
53100, Gombak  
Selangor, Malaysia.

Dr. Nurul Izzah Binti Shari,  
Senior Lecturer (DS 51)  
School of Human Resource Development and Psychology (SHARPS)  
Faculty of Science Social and Humanities  
Universiti Teknologi Malaysia,  
81310 Skudai Johor,  
Malaysia.

5 Dec 2022

Dear Dr. Nurul Izzah Binti Shari,

#### **APPOINTMENT AS AN EXPERT TO REVIEW THE DESIGN PRINCIPLES FOR THE DEVELOPMENT OF A MODULE.**

The above title is referred,

It is our pleasure to invite you, Dr Nurul Izzah Binti Shari to be the expert reviewer for design principles of module development for the following doctoral student at the Department of Educational Psychology and Counseling, IIUM.

Name	: Ayat Binti Ibrahim
Program	: Doctor of Philosophy (Education) – G1711430
Research title	: Integrating Acceptance and Commitment Therapy in developing a value-based bibliotherapy module for sustained dietary behaviour change.
Supervisors	: Assoc. Prof Dr Haniza Rais (Main supervisor) Prof. Dr. Muhammad Sabri Bin Sahrir Assoc. Prof Dr. Joharry B. Othman

For your information, the referred student is currently doing a research about Acceptance & Commitment Therapy (ACT) which is known to be your expertise. Hence, your feedback is valuable to ensure the reliability of her design principles.

Thank you.

Yours sincerely,

.....

Assoc. Prof. Haniza Rais  
Department of Educational Psychology and Counseling  
Kulliyah of Education,  
International Islamic University Malaysia.

## APPENDIX F

### LETTER OF APPOINTMENT

Department of Educational Psychology and Counseling,  
Kulliyah of Education,  
International Islamic University Malaysia (IIUM),  
53100, Gombak,  
Selangor, Malaysia.

Ms. Sue-Anne Lim,  
Registered Counselor,  
Bemban,  
Melaka.

6<sup>th</sup> April 2023

Dear Madam,

**Appointment as “Subject Matter Expert” (SME) Reviewer for the Developed Bibliotherapy Module.**

The above title is referred,

It is our pleasure to invite you, Ms. Sue-Ann Lim, a registered counselor, to be the SME reviewer for bibliotherapy module (a self-help book) to the following doctoral student at the Department of Educational Psychology and Counseling, IIUM.

Name : Ayat Binti Ibrahim  
Program : Doctor of Philosophy (Education) – G1711430  
Research title : Integrating Acceptance and Commitment Therapy (ACT) and quranic values in developing a bibliotherapy module for sustained dietary behaviour change.  
Supervisors : • Assoc. Prof Dr Haniza Rais (Main supervisor)  
• Prof. Dr. Muhammad Sabri Bin Sahrir

For your information, the referred student is currently doing a research about eating behaviour change and Acceptance & Commitment Therapy (ACT). ACT is known to be your main modality in counseling practise. Hence, your feedback is valuable to validate the content of the developed module.

Thank you.

Yours sincerely,

.....  
Assoc. Prof. Dr. Haniza Rais  
Department of Educational Psychology and Counseling  
Kulliyah of Education

## APPENDIX G

### CONSENT FORM (ANALYSIS PHASE)

#### INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

#### **Informed Consent Form for Female Participants who had tried to lose weight**

This informed consent is for female participants who we are inviting to participate in a Design & Developmental Research (DDR) of analysis phase, titled “Integrating Acceptance & Commitment Therapy (ACT) in developing a value-based bibliotherapy module for sustained dietary behaviour change”.

**Name of principle investigator: Ayat Binti Ibrahim**

**Name of organization: International Islamic University Malaysia**

**Name of Project: Needs analysis of developing a value-based bibliotherapy module for sustained dietary behaviour change.**

**This informed consent form has two parts:**

- **Information Sheet (to share information about the study with you)**
- **Certificate of Consent (for signatures if you choose to participate)**

**You will be given a copy of the full Informed Consent Form**

#### **Part I : Information Sheet**

##### **Introduction**

I am Ayat Binti Ibrahim, a PhD candidate from International Islamic University Malaysia. I am doing a research on overweight and obesity which is very common in this country and in this region. I am going to give you information and invite you to be part of this research. You do not have to decide today whether or not you will participate in the research.

Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask me.

##### **Purpose of the research**

Obesity is a risk factor for many chronic illnesses (diabetes, heart disease etc). I want to find ways to empower the overweight and obese community to change their eating behaviour long-term. I believe that you can help me by telling me what you know both about overweight or obesity and about strategies you use to manage your body weight. I want to learn the challenges faced by overweight or obese people. I want to learn about the different ways that overweight or obese people deal with maintaining the weight they have lost.

##### **Type of Research Intervention**

This research will involve your participation in an interview that will take about one hour.

### **Participant Selection**

You are being invited to take part in this research because we feel that your experience as overweight of obese person can contribute much to our understanding and knowledge of this phenomenon.

### **Voluntary Participation**

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. You may change your mind later and stop participating even if you agreed earlier.

### **Procedures**

We are asking you to help us learn more about the experiences of overweight or obese individuals. We are inviting you to take part in this research project. If you accept, you will be asked to take part in an interview with the researcher, Ayat Ibrahim.

During the interview, I will meet you in an online platform (e.g zoom meeting). I will ask you questions about the phenomenon of overweight or obesity and give you the time to share your experiences. The questions will be about challenges to lose weight, how does weight means to you, how willing are you to change your eating habits and a few other related questions.

You can choose a comfortable place anywhere you prefer. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on the next question. No one else but the interviewer will be present unless you would like someone else to be there. The information recorded is confidential and no one else except Ayat Ibrahim will access to the information documented during your interview. The entire interview will be recorded and saved in a digital folder, but no one will be identified by name on the digital folder. The records will be kept in a laptop and online google drive . The information recorded is confidential and no one else except Ayat Ibrahim will have access to it. The records will be destroyed after 3 years after the researcher finished her study.

### **Duration**

The whole research takes place over twelve months in total. This particular interview with you will be held once and will take about one hour.

### **Risks**

There is a risk that you may share some personal or confidential information by chance, or that you may feel uncomfortable talking about some of the topics. However, I do not wish for this to happen. You do not have to answer any question if you feel the question (s) are too personal or if talking about them makes you uncomfortable.

### **Benefits**

There will be no direct benefit to you, but your participation is likely to help me find out more about how to assist overweight or obese clients in your community to sustain their dietary behaviour change.

### **Reimbursements**

You will not be provided any incentive to take part in the research. However, I will give you RM50 for your time and internet data expense.

### **Confidentiality**

The research being done in the community may draw attention and if you participate you may be asked questions by other people in the community. I will not be sharing information about you to anyone outside of the research team. The information that I collect from this research project will be kept private. Any information about you will have a number on it instead of

your name. Only the researcher will know what your number is and I will lock that information up. It will not be shared with or given to anyone except Dr Haniza Rais (research supervisor).

### **Sharing the Results**

Nothing that you tell us today will be shared with anybody outside the research team, and nothing will be attributed to you by name. The knowledge that we get from this research will be shared with you and your community before it is made widely available to the public. Each participant will receive a summary of the results. There will also be publication and small meetings such as conferences in the community and these will be announced if being held. We will publish the results so that other interested people may learn from the research.

### **Right to Refuse or Withdraw**

You do not have to take part in this research if you do not wish to do so. You may stop participating in the interview at any time that you wish. I will give you an opportunity at the end of the interview to review your remarks and you can ask to modify or remove portions of those if you do not agree with my notes or if I did not understand you correctly.

### **Who to Contact**

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact any of the following:

Name of researcher: Ayat Ibrahim

Phone number:

Email: [kaunselor.ayat@gmail.com](mailto:kaunselor.ayat@gmail.com)

This proposal has been reviewed and approved by IIUM Research Ethic Committee (IREC) which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find out more about the IREC, you may visit [www.iium.edu.my/centre/irec](http://www.iium.edu.my/centre/irec).

## Part II: Certificate of Consent

I have been invited to participate in research about integrating Acceptance & Commitment (ACT) therapy in developing a value-based bibliotherapy module for sustained dietary behaviour change.

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant \_\_\_\_\_  
Identification Card no. / Passport no. \_\_\_\_\_

Signature of Participant \_\_\_\_\_  
Date \_\_\_\_\_  
(Day/month/year)

### Statement by the researcher / person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the following will be done:

1. Interview session.
2. Recording of the session.

I confirm that the participant was given an opportunity to ask questions about the study and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Print Name of Researcher / person taking the consent \_\_\_\_\_  
Identification Card no. / Passport no. \_\_\_\_\_

Signature of Researcher / person taking the consent \_\_\_\_\_  
Date \_\_\_\_\_  
(Day/ month / year)

## APPENDIX H

### INTER-RATER RELIABILITY CHECK

**Inter-rater reliability check**

(Generated themes from systematic literature review)

**Research question 1.2: What are the psychological processes successfully managed by the overweight and obese who sustain dietary behaviour change (as documented in the literature review)?**

No	Psychological process	Themes	Subthemes	Author (s)	Inter-rater 1		Inter-rater 2	
					Agree	Disagree	Agree	Disagree
1	Acceptance	Good emotional control	Regulation and good emotional control.	(Reilly et al., 2015)	/		/	
			Low hedonic response to food	(Brockmeyer et al., 2016)				
2		Positive body image	Accept body image	(Santos, Mata, Silva, Sardinha, & Teixeira, 2015)	/		/	
3	Cognitive defusion	Avoiding deprivation	Unhook from deprivation thoughts	(Mckee, Ntoumanis, & Smith, 2013)		/		/
4		Helpful perception	Perceive fewer exercise barriers	(Ostendorf et al., 2021; Santos et al., 2015)	/		/	
5		Not constrained with internal experiences	Skillful in dealing with obstacles when psychological resources are limited.	(Kwasnicka, Dombrowski, White, & Sniehotta, 2019)		/		/

6	<b>Contact with present moment</b>	Awareness of choices of action	Conscious that weight maintenance is in their lives	(Mckee et al., 2013)	/		/	
			Solid awareness of portion sizes and nutrient content of foods	(Reilly et al., 2015)				
			Weight and behaviour awareness	(Kwasnicka et al., 2019)				
7		Consistent use of self-monitoring	Food diary	(Milsom et al., 2011; Mckee et al., 2013; Peterson et al., 2014)	/		/	
			Self-monitoring makes increased attention, awareness and accountability	(Mckee et al., 2013)				
			Keep track of exercise	(Milsom et al., 2011; Kwasnicka et al., 2019; Ostendorf et al., 2021a)				
			Weight monitoring	(Abildso et al., 2014; Milsom et al., 2011)				
8	<b>Self-as context</b>	Flexible restraint of eating	Allow occasional managed lapses	(Reilly et al., 2015; Kwasnicka et al., 2019)	/		/	
			Flexible in dietary habits	(Sairanen, Lappalainen, Lapveteläinen, Tolvanen, & Karhunen, 2014a)				
9		Effective coping skills	Move on from failures	(Mckee et al., 2013; Kwasnicka et al., 2019)	/		/	
10		Self-compassion	Non-food reward system for motivation	(Kwasnicka et al., 2019)		/		/
11		Less internalized weight stigma	Less internalized weight stigma	(Puhl, Quinn, Weisz, & Suh, 2017)	/		/	

12	<b>Values</b>	Motivation	High exercise autonomous motivation	(Ostendorf et al., 2021; Santos et al., 2015)	/		/	
			Satisfaction with weight loss outcome	(Kwasnicka et al., 2019)				
			Health concern	(Kwasnicka et al., 2019; Reilly et al., 2015; Soini, Mustajoki, & Eriksson, 2018)				
13		Human strength	Perseverance and willpower	(Reilly et al., 2015)	/		/	
			Internal locus of control	(Anastasiou, Fappa, Karfopoulou, Gkza, & Yannakoulia, 2015)				
			Self-efficacy	(Abildso et al., 2014)				
14		Adherence to values that motivate action	Follow rules and pick food based on nutritional content	(Christensen et al., 2017)	/		/	
			Act on beneficial behaviours and actions	(Reilly et al., 2015)				
15	<b>Commitment</b>	Maintained commitment to goal	Set goal for exercise and food intake.	(Kwasnicka et al., 2019; Mckee et al., 2013)	/		/	
16		Commit to do behavioural control	Continue to weight loss maintenance techniques	(Evans, Murray, Muratore, Lantz, & Juarascio, 2019)				
			Restrained eating	(Levinge, Stapleton, & Sabot, 2020; Ostendorf et al., 2021)				
			Strategizing techniques	(Evans et al., 2019; Reilly et al., 2015)				
		Use behavioural self-management techniques	(Levinge et al., 2020; Milsom et al., 2011;					

				Reilly et al., 2015)				
			Instrumentalization of eating	(Christensen et al., 2017)				
			Organisation and preparation	( Mckee et al., 2013; Reilly et al., 2015; Kwasnicka et al., 2019)				
			Strong food-related inhibitory control	(Brockmeyer et al., 2016)				
			No comfort eating	(Christensen et al., 2017)				
17		Form habit that commit to healthy behaviour	Healthy eating	(Abildso et al., 2014; Kwasnicka et al., 2019; Milsom et al., 2011; Soini et al., 2018; Christensen et al., 2017; Puhl et al., 2017a)	/		/	
			Physically active	(Abildso et al., 2014; Kwasnicka et al., 2019; Reilly et al., 2015; Soini et al., 2018)				
					14	3	14	3

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## APPENDIX I

### INTER-RATER RELIABILITY CHECK

#### Inter-rater reliability check

(Generated themes from interview with obese informants- Analysis phase)

Interview question	Themes	Main ideas	Verbal support		Inter-rater 1		Inter-rater 2	
					Agree	Disagree	Agree	Disagree
What does your weight mean to you?	Positive self-image	Weight number determine health status	Informant SA	To me, weight is just a number. saya macam dah ada mindset kalau dah capai weight yang begini, saya patut risau. tapi sebelum capai weight yang ini, saya boleh rasa selesa dulu.	√		√	
		Weight is beauty	Informant FA	Saya rasa berat tu penting, sebab kalau nak ambil gambar, susah sangat nak pose bagi nampak kurus. So kena kurus sendiri, takyah pose nampak kurus. Sebelum ni lah, masa duduk kat UIA. Tapi sekarang bila duduk kat rumah, takde orang nampak yang saya makin mengembang. Jadi saya rasa untuk sekarang ni, berat bagi saya tak penting sangat untuk PKP. Masa duduk rumah. Tapi bila dapat tarikh nak masuk UIA , mungkin masa tu saya akan diet habis-habisan				

		Weight is beauty	Informant AS	Beauty. (and as relation to this is experiencing) body shaming , its hard in life.				
		Weight determine confidence level	Informant RJ	I think its my confident. Because currently I am not confident with my weight. I am not confident with myself. Kalau nak berdepan dengan orang tu macam “Alaah, takut”. Sebab dulu tak macam ni. Tetiba sekarang , takut orang cakap “Laa, dah gemuk rupanya.”				

Interview question	Themes	Main ideas	Verbal support	Inter-rater		Inter-rater	
				Agree	Disagree	Agree	Disagree
How do you make decision on what to eat at each meal time?	Preferred choice	Only eat selected acceptable food	Informant FA	√		√	
		Choose preferred dishes	Informant AD				

				preference				
		Choose food that is delicious	Informant RJ	kalau saya, saya akan pilih jem yang “ok, ni sedap. Ni saya suka makan. ” so saya akan beli yang saya suka lah. Bukan health concern.				

Interview question	Themes	Main ideas	Verbal support	Inter-rater		Inter-rater		
				Agree	Disagree	Agree	Disagree	
Are there <b>situations you avoid</b> due to your weight issues?	Avoiding people with potential stigma	Avoid exercise at places that people can see	Informant RJ	Satu lagi cabaran dia kalau contohnya kita dah badan besar, kalau kita nak jogging, contoh jogging dekat luar kan, kita macam tak confident dengan orang. “Eh, orang tengok lah”. Takut nanti orang cakap “Ei, ada bola berguling-guling dekat , tengah track taman” ha macam tu. Benda tu lah yang mencabar sebenarnya. Kalau nak kurus ni. Kalau kita nak keluar berjogging . Sebab tu saya lebih prefer exercise indoor daripada outdoor. Tak nak jumpa orang macam tu lah .	√		√	
		Avoid social event	Informant AS	Kalau macam last week diorang ajak mandi sungai, saya tak nak.				

	Avoid taking picture to post on social media	Informant RJ	Lagi satu, saya macam perasan. Dulu masa berat badan saya masih ok lagi, saya perasan saya dulu macam banyak tangkap gambar diri sendiri. Macam selfie. Tapi sekarang ni saya boleh kira berapa je gambar saya dekat phone. Yang lain gambar orang lain. Gambar kawan-kawan. Gambar parents, gambar family.				
Eliminate uncomfortable feeling through unhealthy lifestyle	Not willing to experience craving (temptation over sweetness)	Informant AD	But equally important factor is my , I fall into my craving . it is so hard to control craving especially for sweet food like cakes. Sweet beverages like coffee	√			√
	Emotional eating (Stress eating behaviour)	Informant SA	Kalau untuk feelings, sometimes when I feel stress or getting near the exam, the feeling of eating more food is higher. saya makan je apa yang rasa nak makan. kalau stress je, fikir nak makan je.  Dan kalau bosan, saya pun akan fikir nak makan je.				
	Uncomfortable to experience changing habit.	Informant RJ	Tapi when comes to exercise, food and everything, alaa macam penatlah. Macam tetiba semangat				

				tu turun balik. Tak nak balik buat. So benda tu repetition. Repeat benda yang sama. Tengok orang macam tu, Ok rasa macam tu. Lepas tu buat dalam seminggu dua minggu, lepas tu alaa penat lah benda ni takpelah gemuk pun gemuklah macam tu				
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Interview question	Themes	Main ideas	Verbal support		Inter-rater		Inter-rater	
					Agree	Disagree	Agree	Disagree
What are the challenges to be consistent in your effort to sustain healthy eating behaviour?	Inability to sustain self-control	Tempted to take viral food (mere exposure effect)	Informant SA	kalau saya tengok orang yang saya kenal beli makanan yang viral, by hook or by crook , saya akan cari dan nak try makanan tu. So, my obsession is untuk kejar makanan viral lah. dan kalau tengok status di media sosial, kawan share makanan yang dia dah makan, saya akan craving benda yang sama dan nak makan benda yang sama juga.	√		√	
		Giving in to favourite food	Informant FA	saya nak kurangkan portion sebenarnya. Tapi susah nak kurangkan portion di rumah. Sebab lauk dia sedap-sedap Saya dah try banyak kali nak cuba suku-suku separuh. Kurangkan portion, sikitkan nasi, banyakkan				

				sayur. But when it comes to my favourite food, I cannot. I kena tambah nasi tu. Bila favourite lauk tu lah.				
		Distractable when craving sets in	Informant RJ	Maybe saya tak boleh kalau benda tu tetibe terlintas di kepala, saya macam “Owh, saya rasa sikitlah..” Ha macam tulah.				

Interview question	Themes	Main ideas	Verbal support	Inter-rater		Inter-rater		
				Agree	Disagree	Agree	Disagree	
What challenging thoughts, feelings or sensations that get in the way of meeting your goals?	Giving up attitude	Giving excuses	Informant AD	Usually when I buy the food, I try to put smaller portion first. but then I think “ok, today I skip dinner. so maybe I can add more.”	√			√
		Have thoughts that will never lose weight	Informant SA	Lepas tu, saya juga rasa macam “memang tak akan kurus lah”. sebab have tried a few methods tapi tak turun-turun jugak.				
		Fear of people’s perception	Informant RJ	Keadaan sekeliling saya. Sekarang kan saya kerja di office. Sebab takut macam aaa... saya akan jaga makan tapi tak setiap harilah saya jaga makan tu. Sebab for me, definition jaga makan tu adalah betul-betul jaga makan. Kalau saya diet, saya akan makan ini, ini, ini sahaja. Saya tak akan				

				makan yang ini, yang ini.. Sebab benda tu yang takutkan kita , takut tiba-tiba “kata diet tapi makan je banyak.”				
		Inability to refuse home cooked meals	Informant RJ	Tapi kalau sekarang ni, family ada dekat dengan kita so macam tiba-tiba kita je nak “tak nak tu, tak nak ni...” Takutlah macam, kita ni dahlah belajar jauh daripada Sabah. Maybe raya sahaja balik, ha macam tu lah. Memang sekejap je dengan diorang. So masa sekarang ni, in terms of diet untuk makanan, mungkin tak lagi kut. Benda tu mencabar juga.				
		Fear of people’s judgment	Informant AS	Macam tengah makan-makan, kan. Walaupun saya tak makan banyak. Diorang macam, kadang-kadang ada je yang “stoplah makan. Jangan makan banyak.”  Hah macam tu.				

Interview question	Themes	Main ideas	Verbal support	Inter-rater		Inter-rater		
				Agree	Disagree	Agree	Disagree	
How do you respond to your most difficult	Inability to commit	Lack of assertive skill	Informant RJ	Sebab sekarang ni kalau perasan, kalau kerja kat office, orang selalu belanja. Belanja makan untuk lunch. Belanja breakfast. Dan takut juga nak cakup	√		√	

goal-related tasks?				“No”. Takut nak cakap “saya tak nak makan.” So maybe I can start my betul-betul tu, when I go to uia.				
	Lack of healthy food choices at hostel	Informant AD		I think right now I am living at college, like carbohydrate, bread, sweetened beverages are the easiest meal to go. For breakfast and dinner. Because there is not lot of option. Cause I take coffee to stay up				
	Skip following exercise task	Informant SA		When we use kira kalori untuk turunkan berat badan, kita akan tend to rasa selesa. kalau terlebih makan, boleh bakar. tapi bakar tu boleh buat dengan berbagai cara kan? saya akan pilih yang paling senang. tapi benda yang paling senang tu pun, saya akan reluctant atau malas untuk buat juga.				
	Lack of information or knowledge to eat healthy	Informant FA		Lepas tu, untuk eat healthy tu, saya nak sangat makan sihat tapi saya taktahu resepi apa, macam mana. Jadi perlukan satu modul gitu. Yang cakap pagi boleh makan ni. Tengahari boleh makan ini. Kalau ada yang itu, insyaAllah saya boleh follow. Cuma tiada yang itu. Yang itulah cabarannya.				

## APPENDIX J

### INTER-RATER RELIABILITY CHECK

**Inter-rater reliability check**

**(Generated themes from interview with ACT counselors- Design and developmental phase)**

**Inter-rater reliability coding template**

**Research title: Design and development of Acceptance and Commitment Therapy (ACT) Bibliotherapy Module for Sustained Dietary Behaviour Change**

**Quality criteria of module: Content validity**

Research question 2.2: How can psychological flexibility elements identified as necessary by the needs analysis, be incorporated into the module?								
Interview question	Themes	Main ideas	Verbal support	Inter-rater 1		Inter-rater 2		Comment/suggestion
				Agree	Disagree	Agree	Disagree	
<b>What is your opinion about the content's accuracy?</b>	Cited and referenced evidence-based content	The presence of ACT components	E3	Accuracy, I mean most of it are okay.	/		/	IR2: Content can also be written as informed evidence-based content.
			E4	I actually feels that the book in general has covered quite generally the idea or the essence of ACT. It does use a lot of... it does follow according to the elements of Acceptance and Commitment Therapy which is good.				
		Citation and references	E3	I feel like, it needs to be, I think I mentioned it as well, referencing and citation. Because it will create				

			credibility. For the person reading, the reader, and trust.					
Provide context	Context of examples	E4	Where you show the readers to compare what is psychological flexible and what is not. I would recommend to give a bit more context prior to this activity.	/		/		IR2: “suggestion = contextual contents”
	Context of the book	E3	Again, going back to introduction. I like erica did mention, the context, I think we , its like the context of the book, where this book sits, it needs to be made clear again.					
Adherence to counseling theory and principles	Behavioural theory: Observe the thoughts without evaluation	E3	And then at the choice point I remember you said to let us see the thoughts are true or not. Which is not defusion is about.		/	/		IR1: Not sure about this. How do you observe your thoughts?
		E4	Rather than labeling it as not good. Rather than labeling it as something we need to deal with, how can we invite this feelings, you know?  And how we can address it in such a way that it is healthy and we are no longer in conflict all the time with the word of craving or the feeling of craving.					IR1: This verbatim does not reflect behavioural therapy
	Present ACT as behaviour or action-based goal	E3	And I think again here, there was some nuances need to be corrected <i>lah</i> . For me the most important part is " <i>tidak fleksibel</i> " would be “I am not living with my values” right?					IR2: Suggestion for theme = counseling principles and techniques

				It is about the action. so everytime it posses the thoughts, then I was like “what about action”.				or
			E4	We are not trying to, “craving is not good. We should shut all the voices of craving”.  But rather now it is showing up, what do we do with this thoughts. What do we do with the thoughts of this craving, right?				Value based principles and techniques
		Counseling principle : Not to impose values	E3	And then I think, certain nuances are in term of ACT, <i>uhh</i> , I think need to be careful about the phrasing and language.  Especially “ <i>syukur</i> ” I could feel that is your values.  Sometimes, it is not everyone’s value. Or they may not feel that way about certain things.  You can leave it open. I think I put it in the detailed ones. For example with present moment, where you say, “ <i>sedarkan diri kepada kesyukuran</i> ”. Then I feel , could you just “ <i>sedarkan diri</i> ” its like simplify things. And leave it open for them to connect to whatever is their values.				IR1: This verbatim emphasize on the thoughts rather than behaviour or action
		Counseling principle: Use positive	E4	One more in general, a suggestion. Is not to use negative connotation. <i>Contohnya macam muka surat 60, untuk lathan item</i>				IR2: (sounds like techniques).

		connotation		<p>1.</p> <p><i>“Saya tidak mahu jadi anak yang susahkan ibu jika saya sakit.”</i> Because <i>“tak mahu”</i> is negative connotation. “I Don’t want, I don’t like”. The word don’t is a negative connotation. So I would maybe change it to a positive connotation like <i>“Saya mahu meringankan beban ibu saya.”</i></p>					
Accurate adaptation and translation	Adapt the metaphor right	E4	<p>You talk about “us” being the driver. The driver of the bus. Maybe in the end of the example, you can also inform the readers ... how does this inform the reader being the driver of their life?</p> <p>I think it will be the closing. Because the walk through experiential activity is good, but then how does this inform the readers about being the driver of our life.</p> <p>So I believe what we want to encourage the readers are to be able to choose our actions.</p>	/		/			IR2 : suggestion: accuracy / consistency in adaptation and translation terms
		E3	<p>You don’t choose to become the weather.</p> <p>It’s more that you are the sky, and the sky doesn’t change and you allow the weather to come and go. I think you are not trying to say that you are the weather that is always changing. But that you can allow the weather to be, come and go.</p>						

		Use correct translated terminology	E3	<p>You said the “cycle of bad habit”. Is that from “diet trap” or...</p> <p>(the original exercise use the word cycle of suffering) “<i>sengsara</i>”. Why not? Because I think if you say bad habit.</p> <p>Then you get stuck in the debate of what is bad habit.</p>					
			E3	<p>I think that is the issue. With some of the phrasing. The word “workable”, “function”, not very prevalent. It could be hard <i>ya</i>. Need to be careful. Stick to that “<i>menjarakkan</i>”.</p>					
		Be consistent in using term for “internal private experience”	E3	<p>Again, the terminology, you flip flop with “<i>jiwa</i>” and “<i>pengalaman dalaman</i>”. So which one you want to use.</p> <p>Yeah because. If you use “<i>jiwa</i>”, sometimes your “<i>jiwa</i>” is talking about the mind. Sometimes you talking about emotion.</p> <p>So, maybe you have to be more specific. <i>Pengalaman dalaman</i>, then are you talking about thoughts or are you talking about the emotion</p>					
<b>Is it thorough/ extensive enough?</b>	Present psychological flexibility via triflex	Somewhat thorough and extensive	E3	<p>I would say it is... it has captured again, the essence of it.</p> <p>Although if you want to go into the nitty gritty part right now right? I was thinking for someone who may not be</p>		/	/		

				familiar with ACT, may not be understanding, you know what approach is this book based on.				
		Triflex is better than hexaflex	E4	<p>I think it is thorough and extensive. Yeah. I feel like , maybe you can stick to triflex, rather than the entire hexaflex. Because the more content you put in, so more, every part needs to be really assessed carefully. Yeah.</p> <p>And then the more you put in, the more phrases where that nuances may make mistakes and stuff like that. It get confusing for the reader.</p>				
<b>Any important information missing?</b>	Include introduction chapter	Explanation of book title	E4	<p>Because when I read the tajuk I was “ <i>Owh, berdamai dengan diet.</i>” So I thought it could be for just any demographic who just want to have beter diet” You know.</p> <p>But when I read the back of the page and <i>dalam kandungan dia</i>, all the <i>isi</i> , the content <i>dalam</i>, I realise it is more created towards the obesity patients. It was for those who perhaps, you know.. would like to explore how to lose weight, or people who are going through binge eating or people who are on larger size.</p>	/		/	<p>IR1: Perhaps “Refining” the book title? Do you need to change the title or provide explanation of the title?</p> <p>IR2: suggestion = Brief introductory chapter on ACT in general.</p>
		Include definition of psychological flexibility	E4	<p>Generally the chapter is good. The chapter did cover about the concept of psychological flexibility rather well.</p> <p>Just that I hope there is a defnition for it.</p>				

		IR2: Include definitions/ an introductory of psychological flexibility		So that we can understand what is psychological flexibility better lah. And provide more context in the example.					
		Include information about ACT and evidences of effectiveness  IR2: Include information/ introductory about ACT and evidences of effectiveness	E4	Maybe a brief description in the <i>pengenalan</i> you know.  Could help me understand better on what ACT is about and get me excited to learn more after that you know. I guess, by talking about including the ACT theoretical framework, maybe that would be the informaton that I would like to be included as well					
			E3	Yeah, introducton. What is ACT. To introduce ACT and that's where you need to make references and the sources of evidences to show it works.  What is the format of this book, what is the purpose of the book. Like I mentioned earlier, it is meant to be used with a professionals, or is it just a manual? Important to mention that it is not a sort of absolute solution. It is not a quick-fix. That is what people always look for. But so we need to balance that. They are looking for quick-fx, at the same time, whether it is accessible for them , get something out of it.					

**Quality criteria of module: Consistency / construct validity**

**Research question 2.2: How can psychological flexibility elements identified as necessary by the needs analysis, be incorporated into the module?**

Interview question	Themes	Main ideas	Verbal support	Inter-rater 1		Inter-rater 2		Comment/ suggestions
				Agree	Disagree	Agree	Disagree	
<b>What is your opinion with regard to chapter 2-8 that aims to train readers with psychological flexibility?</b>	Component of stories	Limit number of characters for stories	E3 Too many characters. One character, you can see the whole process. I mean for me, that it would be better. Because I felt every section I had different stories. I have to reoriented myself.  So if it was the same character from the start, they follow you as a counselor then you see everything comes together. Is a bit easier. Because when it came to the end, I was very, everything very fragmented loh	/		/		
		Non-judgmental stories	E3 Yeah, I feel judged. That's why I think the intro, you explain actually this story is adapted from where... they may not be my story but I as a dietitian, I get a lot of stories from clients.  Then you can go to it. I feel like, I really like the sentiment that you say, to feel they are not alone. I think that is important.					
			E4 Or maybe judging in terms of larger size individual.  Not really judging actually . because					

				<p>don't really talk about it in very judging way but it's very subtle on the tone of it.</p> <p>Because Ayat, one thing I really appreciate a lot what you do right is that you really did your very best to not use judgmental quotes which I very very appreciate.</p> <p>But I understand the challenge of it.</p>					
Content sequence	Begins with contact with present moment and values	E3	<p>From what I remember, I like this chapter (referring to "clarification of values"). I was like... can you just do this part like this one, then you expand. Then you can touch the other skills, as you go along.</p> <p>You don't talk about it as a start. You can talk present moment at the start. Because that goes into being mindful. Then you go into values.</p>	/		/			
	Committed action is after values	E3	<p>I have found your values and committed action like, okay. This is workable. And then everything in front is maybe a bit hard to grasp. When it is all segmented.</p>						
	Acceptance is after committed action	E3	<p>Willingness, I don't know if it is too early to introduce here or not. It is a bit heavy. Because we haven't talked about the issue of, when you actually take valued, committed action right.</p> <p>That's where the discomfort comes in.</p> <p>That's when you talk about</p>						IR1 : Acceptance or willingness?

				willingness and everything.					
	Flow and connections	Avoid unnecessary repetition	E3	Next is commitment. Commitment, chapter ... Yeah I think I also mention a little bit repetitive with the previous section. We need to clear it up a little bit.	/		/		IR2 : suggestion = flow and connecting chapters
		Rationale of doing prescribed activities	E4	So for page 106, this activity you did is quite .. you walk through the readers on experiential activity, perhaps you might want, before that, before that or after that, provide the objective why we are objectifying feelings. Because you mention “ <i>adakah permukaannya licin..</i> ” , what is the temperature of it. So we are objectifying it right. So we kind of need to explain “why we are doing it?” Because the readers can go through it and say yes, I see it , but how it relate to acceptance?					
		Connect the reflection activity with the chapter topic.	E4	I think there is one part of the activity that we did a bit of reflection. I think was on page 29. That was a lot of reflection activity and I hope maybe after the reflection activity it will follow by recognizing and acknowledging without reacting.  Just to emphasize more on the noticing skill within the present moment skill (since the chapter is about contact with present moment)					

Quality criteria of module: Expected practicality

Research question 2.2: How can psychological flexibility elements identified as necessary by the needs analysis, be incorporated into the module?									
Interview question	Themes	Main ideas	Verbal support		Inter-rater 1		Inter-rater 2		Comments/ suggestions
					Agree	Disagree	Agree	Disagree	
<b>What is your opinion about the clarity of the content? Are the instructions clear?</b>	Elements for clear understanding	Illustration or picture	E4	<p>So maybe drawings can be helpful you know. Picture can be helpful as well. So they can visualize.</p> <p>“Owh I am not the person in the passenger seat. But I am the person driving.”</p> <p>So I think a lot of this would be helpful if there is illustration as well. To help them visualize all these beter.</p> <p>Especially the metaphors <i>lah</i>. ACT is so big with metaphor <i>kan</i>? So I think <i>kalau ada gambar-gambar boleh</i> illustrate all these metaphor a bit better. The concept a bit better for the readers juga.</p>	/			/	IR2 : suggestion for theme = clarity of the contents
		Layman’s terms	E3	Because when you talk about all this “obesogenic”, yeah. So like, the term comes to me as a layperson, I don’t know what it means.					
				E4	So I think for the frst chapter, which aims to talk about psychological fexibility. I believe the word “psychological fexibility”				

				is still a bit foreign to a lot of readers.					
<b>Any part that you find helpful, easy to use or interesting?</b>	Engaging content	Engaging activities help to conceptualize learning	E4	I like the activities a lot. I felt it really help me to conceptualize my learning.  I think it was the values that I really like. And it was very easy to understand.	/		/		
		Linking the values to goals	E3	The values part. Linking the values to goals. I think that part is very helpful.					
<b>Would the readers able to understand the content easily?</b>	Explanation and examples	Clear instruction with guidance	E4	In terms of the instruction of the activity right, I would say it was very clear. I don't think there is an issue. I was able to follow every steps of the ways. And I like how you do progression. For example you came out with on page 90. You give the situation and then the strategy. And then you add on the next column. This is the situation and then the strategy. And then <i>kesan jangka masa pendek</i> and then later on we talked about the long term effects. So I think it is a very good progression to teach and also understand the concepts better. And then the spaces of column so they can fill it in their own.  So I really like it. Its very clear.	/		/		IR2 : suggestion for theme = self explanatory contents

				Yes I would say so.					
		Difficult to understand if lack explanation on conceptualization	E4	<p>I would say generally, there are part that is difficult to understand. Although the concept may be a bit more foreign for them to understand, I think there is something that is quite understandable because ACT is very different form of learning to grasp. It is very hard for someone to say “owh I can just observe my thoughts and my feelings”.</p> <p>A lot of time we identify with them so strongly <i>kan</i>. “I am sad. How can you just tell me to observe my feeling”.</p> <p>So I think that is where the explanation will come in very helpful. Like why is it important that we are taking the driver’s position rather than the passenger’s position. Why are we conceptualizing. Why are we seeing emotions as <i>suhu</i>, why are we objectifying it as <i>bentuk</i>. Why are we doing this.</p> <p>Because we want to tell our readers that “we are not our feelings”, “we are not our thoughts”. Just because we feel something, just because we feel something, it is not fact.</p>					

				<p>I think that is something you've written in your book very well as well. <i>Itu bukan fakta</i>, right. It comes and go like wave <i>ombak</i>. It comes and go. And we can be like the seaweed. That just flows along with it. So I think that is something that ...</p> <p>So I think explanation and example are very helpful.</p>				
	Present big picture	Link every chapter	E4	<p>... I would say, perhaps it would be helpful if there is a last chapter that talks about how to conceptualize the each week as a whole.</p> <p>Right now because there is a lot of information, as someone who is reading it, it was like "eh, I love each of the chapter but I don't know how it links from one to another".</p> <p>So maybe like a last chapter that say on "how can we utilize all the six, seven" how it would look like, in a more systematic like a flowchart.</p> <p>It would help me to see beter. How it would look like.</p> <p>Right now, I enjoying each chapter on its own without seeing how it is going to help me week by week.</p>	/		/	IR2 : suggestion for theme = conceptualizing concepts with techniques and activities

				<p>So maybe the last page or the last chapter maybe you could put like “conceptualization” how do you conceptualize my personal diet program, you know... Like a how it would look like.</p>				
			E3	<p>Like I said, I think its too big. To address all.</p> <p>I mean its all there, but because it is too segmented. yeah.</p> <p>As a user, it might be a bit hard to link everything. Because there are a lot. Like sometimes as I go along, I can see that you are trying to introduce one part and later choose the next part.</p> <p>It’s a bit repetitive and if you stop halfway, for that one week, I am not sure if they have understanding of this thing. Because we stop here. Instead of the full thing.</p>				
		Provide worksheet that show overall concept	E4	<p>Maybe a page where you can give them an opportunity to write down, like what are the activities to do every week.</p> <p>What are the summary of everything that I should do each week.</p> <p>Its basically like the last chapter where they ... Ah, okay, with all</p>				

				that being said, so lets do this together. On week 1, we analyze like how we carry out or plan on how do we .. how does a psychological flexibility plans look like. And then on week 1 lets focus on contact with present moment. And then the activity is you know... reflection section, and then so on and so forth. I think that would be helpful to get them to start working on their own.				
<b>What is your perception about the readers' motivation to learn from the book?</b>	Entice motivation	Introduction would be helpful to entice the readers' motivation to read the book	E4	<p>That is something that we will need to be more realistic <i>kan</i>. I would say they would be somewhat interested, able to finish the book. one thing I guess that all authors kind of need to be more aware is how do we entice the readers right in the beginning of the book.</p> <p>So I would think the introduction could be very... we need to capture, you know, the essence like you know, if you were to boil down the whole entire book into this concentrated "<i>kuah</i>" right , what would it be. And put it in the introduction. So I think it's the introduction. If the introduction can encapsulate like, you know... what ACT is and how can we attract them to read this book in the perspective of ACT, I think it</p>	/		/	

			<p>would be very helpful for them to finish the book.</p> <p>If they go in, not knowing “Eh, what is this acceptance and commitment therapy”, why do I need to <i>berdamai dengan diet</i> like “why?” diet is diet <i>lah</i>. Not easy you know.</p>				
	Explain rationale of doing suggested activities	E4	<p>Why the author suddenly talk about “present moment”</p> <p><i>Kenapa dia cakap tentang “acceptance”. Why? Because acceptance and commitment therapy tells that da..da..da..</i></p> <p>Maybe a brief description about why we have chosen “Acceptance and Commitment Therapy”. What are the component that I as a reader will look forward looking at. And how is it relate to dieting.</p> <p>Yeah I think that would be quiet helpful.</p>				<p>IR1 :</p> <p>Suggestion: Explain ACT and the rationale of activities conducted</p>

**Quality criteria of module: Expected effectiveness**

Research question 2.2: How can psychological flexibility elements identified as necessary by the needs analysis, be incorporated into the module?									
Interview question	Themes	Main ideas	Verbal support		Inter-rater 1		Inter-rater 2		Comment/ suggestions
					Agree	Disagree	Agree	Disagree	
<b>Based on your experience as a counselor with knowledge in ACT, do you think the module will be effective in helping readers to improve their psychological flexibility?</b>	Initiating awareness through psychoeducation	Self-help book may create awareness, not likely able to change the behaviour  IR2 : Spark readers' awareness on healthy living and eating style	E3	It may be hard. I wont lie. I mean without support. I think it could be hard.	/		/		IR2 : Suggestion = self help book spark readers' awareness through specified psychoeduc ational approaches
			E4	For self-help right, it is very hard for us to see vast change.  I think it may not immediately increase someone's psychological flexibility But I think it will create a lot of awareness Awareness of a lot of new concepts that perhaps, and new perspective as well. Especially towards people who have not have this kind of diet before.  Its like I've never seen how I can actually accept all of my thought and my feelings towards, you know, eating for example.  So this is a new idea that you are giving to the readers.  I will not say it will increase psychological flexibility but it will help them to be more aware of like "Hey, ya. This is one thing that I can think about. "					

## APPENDIX K

### INTER-RATER RELIABILITY CHECK

#### Inter-rater reliability check

(Generated themes from interview with obese participants- Implementation and Evaluation phase)



**Inter-rater reliability coding**

Research title : Design and development of Acceptance and Commitment Therapy (ACT) Bibliotherapy Module for Sustained Dietary Behavior Change.

**Research question 3.1 What are the practicality of the developed self-help book based on user retrospective and reactions among the participants who attended the 4-week self-help book (*Berdamai dengan diet*) intervention?**

No	Interview question	Themes	Main ideas	Verbal support			Inter-rater 1		Inter-rater 2		Comment/ suggestions
				R	DU	Transcription	Agree	Disagree	Agree	Disagree	
1	Are you able to understand the content of the book?	1.1 Clear explanation of concepts with usage of analogy and examples.	Unfamiliar words or concepts are understood after more reading	R1	98	<i>Basically I understand the content that I read. It's just that there is one part. "Turning the passive into active". Because there is one word. Active is for ..... untuk yang mati. I was like "uh". After I read it again. Ow... ok... I think I read it few times. I am trying to understand it.</i>	/		/		
				R2	8	<i>I am not really remember the word. But there is one word I am not sure what it is. But I've read some of the part after that, I kind of understand the meaning. So its fine.</i>					
				R4	117-119	<i>page 94 , ada mention, "sebab realiti keumuman pengalaman manusia" tu. I think my BM level lah. I was like "apa tu" but like after... because you explain tu</i>					

					<i>yang helpful.</i>					
		Analogy and examples clarify the content	R3	12	<i>I actually understand since you give several analogy about bob, about the driving to know your values and aim, something like that. it is kind of helpful because of the analogy</i>					
			R5	81	<i>In my opinion I can fully understand it really good. Because due to the analogy that you give, the simple words that you give, I think, to understand the content is really understandable.</i>					
		The book is self-explanatory	R4	10	<i>But content generally is self-explanatory. There is no like ... its not hard to understand the content as a whole.</i>					
			R5	220	<i>This chapter really makes me feel like somebody is talking to me. I don't know. the way that.. The words. macam ada orang tengah bercakap dengan saya. Padahal takde orang pun. Bila saya tertanya benda, next word tu dah menjawab dah apa yang saya tertanya tu.</i>					
	1.2	Relatability helps readers understand	Relatability helps readers understand the concept	R4	12	<i>And I find mostly the situations in those chapters are very relatable. And in a good way it attacks me as well. Because like for the part like</i>	/		/	

		the concept				<p><i>“owh, we have all this information about ingredients of the food. How bad it is but, how many times that we know the ingredients of rice, but we still take four bowls of rice to eat”.</i></p> <p><i>I was.. yeah.. so most of it, it’s the situation... the example is relatable to what I am experiencing. So I could understand the context even better.</i></p>				
	1.3	Difficult concept, abstract exercise and jargon words are not understood	Difficult concept and abstract question/exercise	R2	85-89	<p><i>Owh there is one part where I can’t seem to understand as much. It’s about “posisikan diri sebagai diri yang memerhati.”I cant seem to visualize it.</i></p>	/	/		
				R4	259-261	<p><i>activity the next day. Like “berapakah usia emosi ini” tu. I was confuse a bit. either like, how long has the emotion been there. Or like, how old I was when the emotion was there. Ha macam tu. I was confused about the question.</i></p>				
			Jargon words	R2	191-193	<p><i>There is this one part that I can’t understand the sentence at all. But it is for the practices. So it does not affect much. Page 146 (referring to word “keberkesanan”). I tried to re-</i></p>				

						<i>read it. but I still cannot undersand it.</i>						
				R4	72	<i>If I didn't know any scientific words, for example like "insulin", it was mentioned some.. kerintangan insulin. I was struggling with that. I think it is insulin resistance.</i>						
		1.4	Contradiction with participant's understanding create confusion	Confuse with "process statement" after activity that contradict with what the reader had wrote	R4	125	<i>Masa I dah tulis kan, what I thoughts, tapi I punya komen tu positif tau. Pastu macam after that, "mungkin ada pemikiran macam saya tak layak disayangi". Oh I realize, patutnya perlu benda negatif ke? Adakah reflection tu I kena tulis positif atau negatif macam tu.</i>	/		/		
		1.5	Unable to relate the activity at present with learnt skill of previous chapter	Unable to relate the activity at present with learnt skill of previous chapter	R4	381-385	<i>The hari 16 punye aktiviti kut.I would want to know what should I do after that. should I take the food or not macam tu. Dia macam, "thank you minda" macam tu. Helpful juga. Cuma what should I do after that .. dia macam takde apa. Dia macam should I not take or... should I take the sweet ha macam tu lah.</i>	/		/		
2	Which part of the	2.1	Discomfort of past	Unable to remember	R2	105	<i>Owh there is also part where they want us to tell about what we've</i>	/			/	IR2 : Please check the R4

	book that you skip reading or skip doing the activity? Why?		memory remembering and avoid or stop long for reflection.	childhood memory			<i>been through during remaja or like teen and also during childhood. And that part, I skipped it because I don't rememebr the detail as much.</i>				report. The word "triggering" relates to main idea "Skip doing activity if it is about reflecting the past". Delete "long" for the theme.
					R4	91-93	<i>Page 78. Because like untuk ingat memori terkait dua pengalaman. High school and sekolah rendah kan. But me personally, I have the worst memory in high school. And sebab kena buli semua kan. So macam it was a bit triggering for me. tapi takde lah teruk sangat. But it was lke triggering for me, I skip the page.</i>				
					R3	65	<i>Because it actually... Here it mentioned about we need to reflect back how we eat previous day. Hari 1-2. I did not have much time to do it since I read it... because I read it in monorel.</i>				
2.2	Avoid reading or doing activity due to unfamiliarit	Unfamiliarity with activity	R1	54	<i>There is one part that I have to write letter. Letter to my past self I think. Like it makes me think before I used to it. but there is one website called "futureme dot com" or something like this. But</i>	/	/		IR1 : For R2, it is not clear if the reason was not liking to jot down.		

			y or discomfort			<p><i>this letter is like telling myself what should I achieve in the future. But it doesn't. How do you say. it does not say what I have to improve in the future.</i></p> <p><i>So when I read about it again, especially the example of the letter, it makes me think "owh I never write a letter for my past self". I only write letter for my future self. It really makes me feel "owh this is good" but I don't know what I did before</i></p>				
			Skip doing the activity because of don't like to jot down on the book	R2	32-34	<i>Because I didn't really jot down anything from the book... like directly on the book. therefore I think its hard for me to do the table itself. . I am the type I don't really jot down on the book.</i>				
			Table that don't follow usual format create confusion	R2	14-18	<i>I don't really understand the table part. But then I did try to understand and make sense of it. I am not sure if , this will make sense for some people. Because as for me its better just to put it bilangan at the first column. And then make it fleksibel and then not flexible (pointing at the next column).</i>				
	2.3	Skip reading or	Skip doing the activity due to	R3	154	<i>Because I am quite sleepy. I just remember that I need to read this</i>	/		/	

			doing activity due to external factors	sleepy			<i>part. And then I read it and then I rasa macam "Oklah, tidur je lah, ngantuk." Macam tu lah</i>					
				Skip the summary because already understand the part	R4	24-26	<i>Except the tables at the end. Like the fleksibel psychology I just skim throughout it. Because there are a lot of numbers and rows. That's when I tend to like, only skip through. Because I already understood the first part, second part.</i>					
3	What are the strength of the book that motivate you to read?	3.1	Values, goal setting and self-monitoring	Values clarification	R1	24	<i>The strength of the book is more towards the value. Like I could get value out of the book, which is equivalent to benefit lah</i>		/	/		<p>IR2:</p> <ul style="list-style-type: none"> <li>- Find other word for "clarification" in the main idea "values clarification".</li> <li>- Under main idea "self-monitoring", verbatim R3 looks like challenges. Ayat tak habis.</li> </ul> <p>IR1 : I think</p>
					R3	26	<i>It emphasize about value. Something that I really like.</i>					
				Goal setting based on values	R4	182	<i>I think it, because there is like activities that make me explain lah, actually what are your values, what are your eating habits, the simple eating habits. Like start from small . I don't remember which. But yah, think about tabiat makan yang we want to change.</i>					
					R1	120	<i>Because there is one part. I think in the reflection it says, something like list down what do you want , what kind of .. is it values or I think is it what I want to achieve and make it,in a timeline. Not a</i>					



						<i>doing right now.</i>					
				R5	125-127	<i>I think, the thing that makes me want to read further is the relatableness. I think. If you give me something I cannot relate, I think I don't have motivation to read</i>					
			Address personal challenges	R3	26	<i>And then it also touched about, sometimes people already get their ideal weight. But somehow turn back to their original weight before the diet. So that , I mean, try to figure out. That's why this book really motivate me to read about that</i>					
				R4	277	<i>This topic of emotion and psychology tu, it .. I have the biggest struggle in handling emotion. Psychologically. I have spychological struggle lah. So its close to my heart lah this topic. To be honest, emotion is what I struggle the most. Like number one punya struggle. So that's why it motivated more. Just because it relates to me the most.</i>					
			Relatable analogies, narratives and dialogues	R2	111	<i>Because of... I think I love to read the others experiences. Other people experiences</i>					
				R3	42	<i>It actually pretty engaging lah. Because of the analogy, something</i>					

						<i>like that. plus with relatable content.</i>					
				R5	232	<i>I really like you gives many case study. Dia when you give dialogue about the person, the client and the counselor, it really make, I am the person yang bagitau kat kaunselor dan kaunselor tu menjawab apa yang I terlintas.</i>					
	3.3	Information , knowledge and insight	Gaining new information	R2	213	<i>It provides me new information and new things about life. Therefore it makes me motivated to know what I get to know further. Like in terms of this part of, this chapter specifically, I get to learn something new. Therefore with that new information, I think if I further read this part or this chapter, I get to know more. So that's the fun.</i>	/			/	IR2 : Under main idea "gaining new information", verbatim R3 shows this person know about it already. Its not new information.
				R3	71	<i>It taught about mindfulness. It really something that I forget. Especially mindfulness, something that I think children always do. Because they pretend experience. So they really mindful about what or something happened surrounding them. So that is why it motivates me to learn it again, something like that.</i>					IR1 : I guess, for R3, this is more on remembering what was forgotten.
			Gain	R3	160	<i>You explain what action, why she</i>					

				knowledge through answered queries			<p><i>chose it. And then you immediately gives another story. You explain it with another story. About shahrul. So actually , I mean, my question is like the same like Nurul. My situation is like Nurul. The conversation with counselor is the same. And then I have some question. The thing that Shahrul question to the counselor is same like mine. I think that's why it makes me want to read more.</i></p>				
					R5	232	<p><i>Like I mention before this. Like everything , macam previously in chapter 4, 3, there is something that I questioned. And I cannot find the answer. But in chapter 5, all my answers.. sometimes when we read something, we ask. What kind of situation, what example that lead to that person may have not enough motivation. There is, ada orang kan tiada values. Macam. Tapi next page , next exercise tu, dia bagitau. Ada orang macam ni.</i></p>				
				Realization or gaining insight	R3	225	<p><i>We always think "ok, what we think is always correct, something like that". so yah, I want to learn it more deeper, something like</i></p>				

						<i>that. so I can understand more about my mind and how to handle it.</i>					
				R5	306	<i>Sometimes we face , we will face in situation where we trap inside our mind . like... not our mind, literally. Like you mention inside the chapter. Sometimes we get trap in words like “ok, we take sugar, we drink something sweet because people, maybe treat us. So we just keep the day to maintain health , keep healthy”.</i>					
		3.4	Activities provided facilitate concept mastery	Book activities asisst practise of the learnt concept	R1	279	<i>The strength of the book it goes to get the practise part. It allows me to you know, laid back what can I do</i>	/		/	
					R2	353-357	<i>Before I read the chapter 7, I kinda have a question regarding what if , what is questions. But after I read the whole thing, and then there are part where in this book that mention tips or something that can put us in consistency. Like being consistent in doing that , so I kinda like, like it. because it gives so much example how to do it and all. I get to understand that even though we are unable to do it</i>				

						<i>perfectly, it is actually normal for human beings. Because not everyone is perfect</i>					
					R5	32	<i>I think the strength of the book is by using , providing as the activitylah. The thing we need to do. If you don't provide the activity, it did not, it will not affect my motivation. It become 6 or 5 . or maybe maintain at 4. but by using the activity, it gives a sense of self reflection</i>				
					R4	99	<i>I feel like the many activities. I think like the activities are the most helpful for me. Because I didn't , just because I didn't know I needed to do this activity to reach a certain level of awareness. Or to like even be aware that , owh that is what I've thought before.</i>				
				Illustration of strategies to commit in action	R3	286	<i>Of course throughout the journey, there is challenges to commit and how to supervise, that's the reason why I motivate to read this lah.</i>				
					R4	182	<i>And then like what makes me more motivated is because at the end, there is like strategies... specifically the SMART , like how an we like move on from now. Like using our values and motivation.</i>				

						<i>So that is why, that makes me more motivated. As like I can know how to tackle the habits for example. The bad habits.</i>					
				R5	306	<i>It shows to me and illustrate me how the situation that I always face. When I want to keep healthy. For example, when people want to treat me sweet drink, even though that day, I want to cut sugar, I don't want to eat sugary food, I don't want to eat fast food. But things like that are keep going . and then we trap with our thoughts that maybe, "its ok to drink it". maybe "this is for today." Or "we need to .. we need to drink it, its ok. We share it with our friends." But it's wrong. We trap with that thoughts. So because of that, I think, that is 2 strength for this chapter lah.</i>					
	3.5	Reading experience and engagement	Font and paragraphing	R2	20-26	<i>By the way I like the font. I think its bigger and make me easy to read. And also because the size it makes me motivate to read because the size is bigger than usual one. Like the usual novel type. So its fine. Because some font, they really like the small one. And it does not really motivate me</i>	/		/		

						<i>to read. Because in one page it just makes me think, owh there is so much to read.</i>					
				R3	32-34	<i>Since the paragraph also already short. I mean easy to read. That's why. Its pretty easy to follow</i>					
				R5	52	<i>Its realy fun to read. I cannot wait to read another chapter. Yes. And then, I don't know, the font of the book but bpreviously I think, one page there is so many words. But for this book, its oklah.</i>					
			Able to involve with the book	R1	64	<i>Like . its because this chapter is more . I have to accept it within myself. Its like my body .my eyes, my nose evertyhing. In a way it makes me feel, I am involve with the book. Its just that, I am involve but how more should I explore myself to the point that I can really be that person that I want to be in furture maybe. In one or two years time. I want to have that body why cant I achieve it now.</i>					
			Explanation and summary assist in understanding	R3	286	<i>Summarization of the previous chapter as you will see the , you know, the journey throughtout the journey, that's one part.</i>					
				R4	277	<i>Because of personal factor kut. Like the ..ok the book itself generally very well explained.</i>					

		3.6	Self-improvement and change	Helps to uncover weaknesses	R4	182	<i>so like, it uncovers all my weaknesses that I havent given much time thinking about it before</i>	/		/		
				Change in self	R5	199-201	<i>Honestly, I want to read the next chapter, because I can feel a little bit of changes in myself. Like I start to thinking about how many rice that I take. Like seriously this is not lie. I don't take, I just ok , sampai five scoop I take the rice. But now, I only take half. That become naturally. Because I imagine myself. And then I macam tu lah...like it really interesting.</i>  <i>Cuma macam sugar lah susah sikit macam ketagih. Tapi nasi dan sayur dah kurang dan tambah. Sampai roommate saya pun tegur "uish, kau makan sayur dah".</i>					
				Skill upgrading	R5	26	<i>to be honest, I think, around 7 lah because previously on scale 4-3 because I don't think it is important. But the book really upgrading my skill. I believe if I read more and more, I think the motivation scale will go up.</i>					
								12	2	12	2	

**Research question 3.2: To what extent does the implementation of self-help book (*Berdamai dengan diet*) improve participants' state of psychological flexibility to sustain healthy eating behaviour change?**

No	Interview question	Themes		Main ideas	Verbal support			Inter-rater 1		Inter-rater 2		Comment/suggestions
					R	DU	Transcription	Agree	Disagree	Agree	Disagree	
1	Does the book help you improve your skill in modifying eating behaviour? If yes, how is it so?	1.1	Knowledge acquisition and insight	Understanding about psychological flexibility processes	R1	287	<i>I would say, gladly honoured so. Because from the first chapter I think, about values. Then it goes towards, the acceptance. So I find it helpful to the point that before reading this book, I always tell myself like "why am I like this, I want to change but cannot change." There is always gonna be 2 version of me. One accept, and another is not accept. But through this book, I can learn I can accept it. "Owh, why, how?" Its more towards how I accept it. so out of all the values and towards on how can I learn to accept it based on the values that I want to get out of it. what is my goals, what I want to achieve, what person I want to become, I find this book is very helpful.</i>	/		/		IR2 : How do you differentiate between main idea "understanding about psychological flexibility processes" and "gain insight about importance of psychological flexibility"?
					R4	449	<i>because the book does not like</i>					

							<p><i>macam explain or recommend "owh.. which diet works best , which diet doesn't work." It doesn't sentuh method of diet sangat. And pushing people to do one certain kind of diet. its relates more to internal struggle that everybody struggles with. so it helps a lot psychologically, emotionally. And on identifying nilai. the values. more on like solving internally. Than externally macam tu. Like solving internal struggles than choosing what to eat.</i></p>				
				Gain insight about importance of psychological flexibility	R3	314	<p><i>I think, the intention of this book already mentioned how there are many books out there about diet. But there is none about the psychology itself. Because .. and you also said about , many examples about your clients. And that it really like , this is what the problems that many people out there go through and then because of this book itself, it modify , its not like modify, but it changes my perspectives on having values itself. Because I am someone, because if I,.. because I am not, I do not have values like, you know the previous one.</i></p>				

						<p><i>I macam “diet? Takpelah” macam tu lah. But because of this book, I reflect back why I did my diet previously after my SPM.</i></p> <p><i>I think because I want to you know, I actually, I surprise by my weight at that time. And I want to change it because I want to be prettier something like that. so actually, when I read this book, I arctually reflect what I’ve done previously that I has values actually. But that thing already forgotten because of you knw... many times has parted.. and then it reflects what I need to do lah for this life actually. Its not only about eating.</i></p> <p><i>eating itself is not like solution, like you know, having a depression or stress, we eat. But somehow it actually not a long-term solution. It is just short-term. And it will give us long-term impact</i></p>					
					R4	451-453	<p><i>pastu macam contoh, I was looking into ketosis contohnya, the benefit of ketosis, the effect after that, what happens when you start doing ketosis. So semua tu which is informative. Tapi they never once mention about the emotion and struggle. which is the most , for me</i></p>				

						<p><i>lah, the most important thing especially at the start sebab cutting sugar is the most important part of diet .</i></p> <p><i>tapi, cutting sugar, dia macam kalau you ambik dadah, you kena stop dadah, you will go crazy. and they seldom mentioned that part macam tu. Like apa, combating emotional and psychological struggle tu , really rarely that they mentioned it. macam tu. and Ironically people banyak tertewas dalam bab tu. so disebabkan that factor macam tu. sebab I know, sebab I dah banyak kali throuout, teenagers, I pernah skinny dulu sampai sekarang. Pernah naik turun. I tertewas dalam segmen itu. haa. macam mana psychological ... hmm...you can have the best diet method, tapi if you cannot be good in that segment, macam tak guna pun. Bagi I tu lah root cause which ada kat buku ni. dan dietitian semua tak addresss this root cause macam tu.</i></p>					
	1.2	Awareness	Able to manage thoughts and understand	R2	393	<p><i>in terms of managing my thoughts and also being able to udnerstang the feeling. Like my cravings and all. So instead of doing it by relieve</i></p>	/		/		

			own feelings			<i>it, I tend to. Well I get to understand why and how I can manage them.</i>				
			Aware of own thoughts and emotions	R4	449	<i>macam I throwback balik masa makan tu, be aware of everything like the taste, and then when its coming to my stomach semua. Like being aware. Because sometimes before this we don't have awareness tapi this book macam make me, macam aware of my thoughts , of my emotions of what I am doing physically semua tu.</i>				
	1.3	Practise	Practise accepting emotion	R4	449	<i>So especially me yang sangat susah to manage emotmion. I think this book really macam make me practise a lot of stuff yang to be honest, out of my comfort zone . because ive never done it.</i>	/		/	
			The exercises allow the reader to practise	R5	435-437	<i>yes. I think this book really helpfullah for me to modify my diet. I think because like , usually I consult with the net, no references, no exercises to do. Just read without any practical thing to do. But with this book, you giving me many exercises, really helpful for me to make me remember . and then when I forgot something, I just need to open the book. Maybe I forgot about what is my values.</i>				

							<i>Why I want to be more healthy. So I just open the book and then I am "ok, how to be more aware about it. so that's why I think the book is really helpful for me. Rather than just read it from the internet, or maybe hearing it from other person. So the book is really helpful lah.</i>				
2	Which parts of the book which you found very helpful? Why?	2.1	Guidance, examples and stories	Research findings, examples and guidance	R5	38	<i>And the research. 3 things. Because I love to read something that is factual. Because when I read something based on reasearch, facts, only by using that I will believe something. Not from poster, there is no research. I tend to not believe it.</i>	/		/	
					R1	70	<i>And the...when I want to reflect myself, there is an example on how I have to do it. so it makes me feel "owh ok, I am being guided. As if I am in the presence, as if there is a psychiatrist with me."</i>				
				Stories	R2	42-44	<i>I just say it just now which is because there are so many people. There are so many stories in this book that illustrate my feelings as well. Its kind of like, fun and also make me realise that more people also going through the same thing as me.</i>				



						<i>examples through stories.</i>					
	2.2	Reflection and self-monitoring	Reflection	R1	30	<i>the reflection about the short term and long term. That's quite useful. Because it actually makes me think back, owh everything ive done so far is actually short term. i didnt realise, ok i should think baout this in long term. so that part makes me think, like makes me ponder more.</i>	/		/		
			Self-monitoring and journalling	R2	381	<i>I think it helps me in understanding how do I become consistent in doing whatever I want. So its kinda like helpful in terms of the timetable.</i>					
				R3	304	<i>About the pantau komitmen.</i>					
				R4	405-409	<i>Tapi I suka that it is helpful fo rme the most yang pasal journalling tu. like you have tu apa, jurnal, jurnal whatever tapi I rasa this chapter macam merumuskan whatever sebelum-sebelum ni punya topik macam tu.  sebab dia macam memantau diri sendiri kan. To be honest, ive doing for a long tiem. Tapi like not like I jurnal ke apa tau. I tak catat apa-apa  So macam when I saw macam ada table macam ni.. owh.. ok. Macam</i>					

						<p><i>its gonna be , its important to do those thing lah. Macam pemantauan diri ada macam report, catatan ha macam tu.</i></p>				
				R5	391	<p><i>next the chapter also tell us to observe our commitment or how .. eh macammana ek. How from individual who has been observed by oters. How that individual can obseslrve themselves. So the chapter also tell about that. and how we want to observe ourselves macam pantau diri. Ha macam tu lah. Nak jaga makan kan. Ambik suku suku separuh ke apa ke.</i></p>				
	2.3	Goal setting, decision making, committed in action and problem solving	Active behavioral action in designing goal	R3	170	<p><i>I mean because as I said just now about tingkah laku aktif. I mean you know how to.. I mean previously in the chapter 4 right, It mention how to terima, cerita bob jugak. The tory of Bob. We need to terima the kesengsaraan something like that. so when day 9 mentioned about untuk terima is not a passive action. So when benda tu continued in day 10. About what is the tingkah laku aktif. So I think that's why I find it the best. Because somehow, about when Syahrul eat egg tart, its actually same with eating cake. I find it really relatable and relevant</i></p>	/		/	<p>IR2 :</p> <ul style="list-style-type: none"> <li>- Instead of main idea “goal setting”, you may use “Using SMART”</li> <li>- Under main idea “problem solving”, Verbatim R1 does not show it is related to problem solving.</li> </ul>

							<p><i>to me. Because if I stress, I will eat. And then I find , I try to terima. I mean before this in chapter 4 and about story Bob, you mentioned about terima, so I terima. But in the sense that I chose to do another bad habit something like that which is playing games. Its not bad habitk, but because I want to avoid that thing, I do this thing. And this thing in long term , its not good.</i></p>				
					R5	282	<p><i>I think for the day 10, yang about talking about how our behaviour is shaped by our value. I think this is very good. I think this part really makes me feel like. It shift my perspective on sugary food. Because before this I never know about there is passive and active behaviour. After reading this, I just found out lah, like I thought macam , I think the analogy is funny because you give analogy about ... passive ni orang mati pun tak makan lah. So I think that is really, serious kak Ayat. When I read this part I need to stop reading. Then I need to process and then I laugh. i think this really good lah this part. like the part that change my perspective in day 10.</i></p>				

				Goal setting	R1	126	<i>I love the part of the chapter that I like is when , the SMART guide</i>					
					R4	186	<i>. to be honest, in this chapter, in this bahagian specifically, I find every part very helpful like in its own way. Because the exercises are there interrrelated but at the same time they are very different. I would say. so its not like so I find every part is very helpful in their own way. but the most helpful that makes me, ok after this I can do this, is the chapter with the SMART activity.</i>					
				Decision making and committed in action	R3	77-79	<i>I mentioned before about mindfulness and how to see us from third POV. Something that usually novelist will do. I mean describe their character. Because it will , I mean, slower our decision making something like that.  decision making particularly in choosing what we want to eat, something that we desire, soemthing like that. it is not like I will slower my decision making in doing particular task. It is more like if I want to follow my desire. It taught me to pause, something like that</i>					

				R4	437-439	<p><i>mainly because of direction. Telling us what to do. Strategies. Practical... the direct strategies on how to do things macam tu. memang apa nama dia, guidance lah. Haa. So more on action to do after this. mainly that lah.</i></p>				
				R5	318, 324	<p><i>Owh I think the part where you extract the commitment exercise. That is adaptation from Harris 2008.</i></p> <p><i>I think it really helpful because like previously, before I read another chapter, I want to make some comparisonlah. When I read previous chapter, I don't know how to have a commitment lah. but using this exercise it becomes more clearer to me lah. It really helps me to build my own commitment like we knowlah commitment is really important to achieve something. To be more healthy. So I think by using this kind of exercise, its really open my eyes and mind.</i></p>				
			Problem solving	R1	283	<i>again, it goes back to the cabaran halangan. The four points</i>				
				R3	304	<i>And of course dengan yang atasi</i>				

						<i>halangan.</i>					
				R4	441	<i>so like macam, identifying our struggles, solution to the struggles,</i>					
	2.4	Acceptance-related content	Concept of acceptance	R4	40-42	<p><i>And also the introduction to ACT, I feel like its very new to me. And the explanation of it the examples I think its really helpful to prepare myself fo rhte rest of the book.</i></p> <p><i>its because , its about validating the bad experience.. not bad experience, the bad feelings, emotions and thoughts as well. its not like completely invalidating its like “you should nt have this”. And about the bob example , like letting it inside and just entertain him. It’s a good example of craving. And then that’s wher ACT comes in. and explaining, its ok to have this bad thoughts, emotions. Yah.</i></p> <p><i>So some advices or some ape... some ways , they said like “don’t let it coming to your thoughts” don’t let the negative emotions get to you. But ACT lets you actually process all the thoughts, emotions and everything. so yah.</i></p>	/		/		
				R5	332-334	<i>I think another part that is helpful for me is the “kesanggupan” . the willingness of someone to achieve a</i>					

						<p><i>goa. For example when you show me this situation, of a person for example, for instance, someone feeling to went back home to help the parents because.. ha cane eh nak cakap.</i></p> <p><i>macam kesanggupan seseorang tu kan. Macam ada yang sanggup memasak untuk keluarga walaupun dia letih dan... kurang bertenaga. Tapi bila akak gunakan contoh tu, the example to praktik to achieve a goal towards healthy life ni. for example macam , willing to cook before going to sleep because want to have a good diet. And then I think, its really , it inspire me lah. To have that kind of willingness. For instance I start to think about "ok, why macam kita kan macam berpuasa". Kita sanggup menahan diri daripada lapar dan dahaga. Tapi kenapa bila hari biasa tak boleh buat macam tu. Ha macam tu lah. Bila tiba ni baru saya tersedar yang macam, owhh...</i></p> <p><i>waktu puasa aku boleh. Tapi waktu hari biasa ni kalau tak makan berapa jam rasa nak mati, macam tu lah</i></p>				
--	--	--	--	--	--	---	--	--	--	--

				Acceptance skill	R2	308-312	<p><i>I think for the part yang jatuhkan sauh tu.</i></p> <p><i>so like, in english I use it for pausing button.</i></p> <p><i>if I were to do something, when it gets stressful, I need to remind myself that not everything I get to do it, in one time. So I need to pause a moment and take a break for me to work further.</i></p> <p><i>because I think, me personally, I tend to do something because I wanted to look at the outcomes. But I hate the process. Which is not normal for some people.</i></p>					
					R4	36	<p><i>So yeah craving, I think craving is an essential problem everyone going throuh especially starting to have healthier diet.</i></p> <p><i>personally it's the worst struggle for me to have healthier lifestyle is the craving. So I think this is the first book that I read in all diet book that mentioned the problem. Because it And focusing on psychological effect. Because I think know a mount information about diet or information about the book that will solve the craving. So</i></p>					

						<i>I think that's the sole reason why.</i>					
				R5	242	<i>the kitaran kuat daya tahan. I think that is really, teach me something new lah .like valuable knowledge lah about values</i>					
	2.5	Cognitive defusion-related content	Concept of cognitive defusion	R3	231	<i>about our mind is like a radio. That part is really, I mean. Basically, we always think, as I mention before, we always think what after we rationalise everything. We think that it is.. you know the right one, the right choice, something like that. but somehow we need to nilai, sejauh mana pemikiran kita tu tolong kita kan. So, that's what makes me really .. you know... reflect back what my mind always taught me. Because as you mentioned before, I mean in this book, how mind always give us advise. But somehow is the advice help us or not. Something like that</i>	/		/		
			Cognitive defusion skill	R4	289-291	<i>helpful... yang , I would say... kecap eh. I would say yang the craving part kut. The yang ni, yang page 187. About... I feel like , the ... I think because it is new to me kot. That I wasn't aware before. Dia macam ok, with words , it can be a symbol to us. That we can automatically</i>					

						<p><i>think or feel about something. so like the giving the situation yang counseling session tu. And seeing the client doing the activity tu, I rasa its helpful for me. it's a new thing lah. I ve never seen this method.</i></p> <p><i>Yeah. At the end of chapter practise lah. But it took some time. After I understand. Sebab ni involve feeling tau. Dia bukan understand je.</i></p> <p><i>sebab kalau understand is like, kalau sebut banyak kali, like the client experience, it would like change the perspective towards coffee.. it u like understanding tapi like to experience and feel it, it took me after some time. Only then I could understand the experience. So that is helpful for me in that way.</i></p>				
		2.6	Values motivate behavioural change	Values motivate behavioural change	R2	227	<p><i>hmm, if I were to highlight something , I think the first part of this chapter is actually , expose me to a new world. Because I don't really think that by having the good reasoning, would hep me to , would motivate me to do something. But then whenn I look into the example</i></p>	/	/	

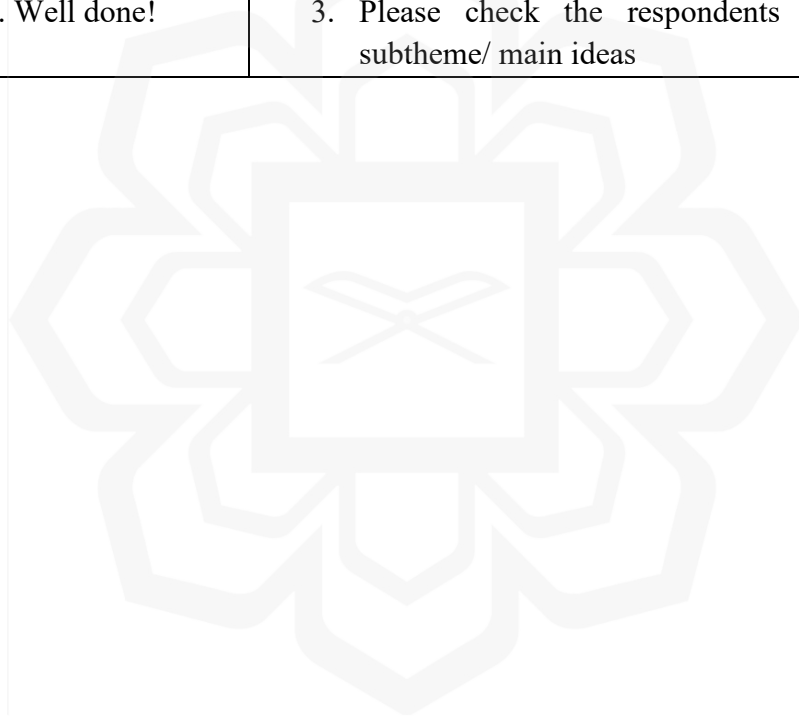
						<p><i>like the contoh-contoh kan, it just shows that, "owh.. people do this as well"</i></p> <p><i>so its kind a like beneficial for me as well</i></p>				
	2.7	Self-compassion and normalising problem	Self-compassion and normalising problem	R2	115-117	<p><i>in terms of helpful, I think, it helps me in terms of thinking in positive manner.</i></p> <p><i>the one that , uhm. The one that I said about criticising just now, there is also one part where this, one of the experiences that say that rather than you criticize the self, why not you try to be your own best friend. by doing something helpful for yourself, rather than punishing yourself. because ive been punishig myself for something that I cannot change. Its just something so awful actually. But I don't really realize that because no one really put it in words. now that ive find it , now that I can read it from other people story or like experience, I realize that its not helpful for yourself there fore I need to be gentler to myself. To help myself.</i></p>	/		/	
				R4	40	<p><i>But what helpful for me is when the dialogue between the counselor and the client. Make me feel that the</i></p>				

						<p><i>problem that I am facing is normal. even though its hard, its normal. Because like I seldom read any transparent dialogue like that before. So I feel like laying out the situation that happen in real life, help me.</i></p>					
				R4	123-125	<p><i>I paling suka yang tulis sepucuk surat tu. I rasa tu paling helpful lah. As third party you see yourself.</i></p>					
	2.8	Relapse management	Relapse management	R1	204	<p><i>I find, as usual most practices I find it very useful to me. Its like make me to know how do I deal with certain situation, with certain cravings that I have. Or how I deal with like blackout moment. "owh" I am at that moment that I cannot go on. I just have to satisfy all my cravings. what I want. But at the end of the day, it just bring me back on track.</i></p>	/		/		
				R4	36	<p><i>because I think this is the book or like diet advice that everyone needs. That is not in other diet book. because other diet book or other diet article, they only lay out like the advantages and disadvantages of certain kind of diet. And more scientific words but none of them mentioned about relapse. About what we are going</i></p>					

							<i>to feel. They only like focus on end result. Like you are gonna be this, you gonna be that. but like this book motvated me because it menion what is going to happen. And actually it is ok to feel that way.</i>					
					R5	246	<i>maybe after I finish the book and the next time I want to set my feeling, I can just do it again this activity. But the Bob punya situation I susah nak relate. Tapi yang ini I boleh buat. So yang ini lagi relatable lah.</i>					
					R5	380	<i>And I think it's a good .. for me lah, this the real ending. Like the chapter 7 teach me about how if I skip or what if I facing . cammana nak cakap kalau kita tak mampu buat benda tu kan. Ha macam tu lah . ha tergelincir macam tu. like there is a .. dia macam there is a day that we will not become inconsistent because we are human too</i>					
								11	0	1 1	0	

Comments / feedbacks

IR1	IR2
<p>In my opinion, most of the analysis is to the point and answers the research questions. Only a few mistakes that I disagree with and I have explained why. Generally, this is a very good analysis. Well done!</p>	<ol style="list-style-type: none"><li>1. Overall are good and acceptable themes</li><li>2. However please check your main ideas, seemed redundant. And need to rephrase/ simplify the sentence</li><li>3. Please check the respondents statement (DU): under other themes/ subtheme/ main ideas</li></ol>



## APPENDIX L

### AUDIT TRAIL

#### Preparation for research work

Date	Activities	Records/ resources
March 2020 – May 2021	Selection of Topic. Preparing CRQ, RQs and IQs	
2 June 2021	Research proposal defense	Research proposal
13 July 2021	Submitted documents for IIUM Research Ethics Committee (IREC) approval	
5 Aug 2021	Receive IREC approval	IREC approval letter (ID No : IREC 2021 -225)
10-20 Aug 2021	Design interview protocols	Interview protocols
13 Aug 2021 & 14 Aug 2021	Receive validated interview protocols from the experts Ms Sandi James Prof Michael Levin	Interview protocols

#### Phase 1 : Analysis phase

Date	Activities	Records/ resources
<b>Data collection for RQ 1.1 &amp; 1.3</b>		
5 Sept 2021	Pilot interview	Video recording
11 Sept 2021	Data collection Informant 1	Video recording
12 Sept 2021	Data collection Informant 2	Video recording
13 Sept 2021	Data collection Informant 3	Video recording
16 Sept 2021	Data collection Informant 4	Video recording
17 Sept 2021	Data collection Informant 5	Video recording
Oct-Nov 2021	Transcription of data	Transcribed verbatim
Dec 2021	Analysis of data : Coding	Thematic coding

Jan 2021	Analysis of data : Generating themes and sub-themes	
2 March 2022 15 Feb 2022	Receive reponse for Generated themes Inter-rater reliability check 2 inter-raters	Inter-rater reliability check forms.
<b>Data collection for RQ 1.2</b>		
15 July 2021	Selection of articles for systematic literature review	
July – Sept 2021	Coding the information that answer research questions.	
Oct 2021	Analysis of data : Generating themes and sub-themes	Generated themes of SLR
2 March 2022 31 Dec 2022	Receive reponse for Generated themes Inter-rater reliability check 2 inter-raters	Themes inter-rater reliability check forms.
<b>Data collection for RQ 1.4 &amp; 1.5</b>		
March -April 2022	Selection of articles for literature review	
March – April 2022	Selection of verses for Qur'an review	
May – July 2022	Analysis of data : 1. List down elements and components to be incorporated into the module 2. Revise design principles	

### **Phase 2 : Design and development phase**

<b>Date</b>	<b>Activities</b>	<b>Records/ resources</b>
<b>Data collection for RQ 2.1</b>		
14 Dec 2022	Revise design principles Concept walkthrough with informant E1	Revised design principles
7 Dec 2022	Revise design principles Concept walkthrough with informant E2	Revised design principles
Dec 2022 – March 2023	Start develop prototype 1 based on revised design principles	
<b>Data collection for RQ 2.2</b>		
10 Apr 2023	Protototype 1 is developed	Printed prototype 1
15 May 2023	Data collection Informant E3	Video recording
22 May 2023	Data collection Informant E4	Video recording
12 June 2023	Data collection Informant E5	Open-ended questionnaire
13 Apr 2023	Data collection	Open-ended

	Informant E6	questionnaire
June 2023	Transcription of data	Transcribed verbatim
July 2023	Analysis of data : Coding	Coding report
July 2023	Analysis of data : Generating themes and sub-themes	Generating themes template
	Inter-rater reliability 2 inter-raters	Inter-rater reliability form
Aug-Oct 2023	Develop prototype 2 based on experts feedback	
Nov-Dec 2023	Prototype 2 editorial, layout design and printing.	

### Phase 3 : Evaluation phase

Date	Activities	Records/ resources
<b>Data collection for RQ 3.1 and 3.2</b>		
Feb-March 2024	Recruitment of participants via offline and online marketing	-Program poster -Registration google form
1 <sup>st</sup> – 5 <sup>th</sup> April 2024	Initial meetings with all participants (online and offline) – Explain the learner plan – Informed consent	-Prototype 2 of “Berdamai dengan Diet” -Informed consent form
15 <sup>th</sup> April 2024 - 30 <sup>th</sup> May 2024	Reading task begin according to week : Week 1 : Chapter 1-3 Week 2 : Chapter 4 Week 3 : Chapter 5 Week 4 : Chapter 6 and 7	
21 <sup>st</sup> April 2024	Data collection Participant R1 (chapter 1-3)	Video recording
26 <sup>th</sup> April 2024	Data collection Participant R3 (chapter 1-3)	Video recording
28 <sup>th</sup> April 2024	Data collection Participant R5 (chapter 1-3)	Video recording
28 <sup>th</sup> April 2024	Data collection Participant R1 (chapter 4)	Video recording
30 <sup>th</sup> April 2024	Data collection Participant R2 (chapter 1-3)	Video recording
5 <sup>th</sup> May 2024	Data collection Participant R1 (chapter 5)	Video recording
8 <sup>th</sup> May 2024	Data collection Participant R4 (chapter 1-3)	Video recording
11 <sup>th</sup> May 2024	Data collection Participant R3 (chapter 4)	Video recording
15 <sup>th</sup> May 2024	Data collection Participant R2 (chapter 4)	Video recording

22 <sup>nd</sup> May 2024	Data collection Participant R3 (chapter 5)	Video recording
28 <sup>th</sup> May 2024	Data collection Participant R1 (chapter 6 and 7)	Video recording
30 <sup>th</sup> May 2024	Data collection Participant R5 (chapter 4)	Video recording
3 <sup>rd</sup> June 2024	Data collection Participant R4 (chapter 4)	Video recording
5 <sup>th</sup> June 2024	Data collection Participant R2 (chapter 5)	Video recording
21 <sup>st</sup> June 2024	Data collection Participant R3 (chapter 6 and 7)	Video recording
24 <sup>th</sup> June 2024	Data collection Participant R5 (chapter 5)	Video recording
26 <sup>th</sup> June 2024	Data collection Participant R4 (chapter 5)	Video recording
1 <sup>st</sup> July 2024	Data collection Participant R2 (chapter 6 and 7)	Video recording
24 <sup>th</sup> July 2024	Data collection Participant R4 (chapter 6 and 7)	Video recording
26 <sup>th</sup> July 2024	Data collection Participant R5 (chapter 6 and 7)	Video recording
27 <sup>th</sup> July – 11 <sup>th</sup> August 2024	Transcription of data	Transcribed verbatim
12 <sup>th</sup> – 26 <sup>th</sup> August 2024	Analysis of data : Coding	Coding report
27 <sup>th</sup> August – 15 <sup>th</sup> September 2024	Member check	-Summary of keypoints answers -Transcribed verbatim
27 <sup>th</sup> August – 15 <sup>th</sup> September 2024	Analysis of data : Generating themes and sub-themes	Generating themes template
16 <sup>th</sup> September – 20 <sup>th</sup> October 2024	Inter-rater reliability 2 inter-raters	Inter-rater reliability form

## APPENDIX M

### DEVELOPMENT OF PROTOTYPE 2

<p><b>Mengapa ACT?</b></p> <p><i>“Nikmati hidup dengan lakukan apa yang penting, sekarang.”</i></p> <p>Pada bab sebelum ini, telah digambarkan contoh kehidupan sesetengah golongan yang terperangkap dengan cabaran saiz badan lalu “lari” daripada kehidupan bagi mengelak hadirnya pengalaman dalaman yang tidak menyelesaikan.</p> <p>Mungkin dia hargai sesuatu aktiviti tetapi memilih tidak melakukannya kerana belum mampu mengurus pemikiran atau emosi yang kerap hadir setiap kali aktiviti tersebut mahu dilakukan. Model ACT sebagai terapi tingkah laku memberi kemahiran kepada klien memerdekakan diri daripada perangkap pengalaman dalaman. Melalui kemahiran tertentu, klien diharapkan supaya mampu menjalani kehidupan yang dimahukan meskipun hadir pengalaman-pengalaman dalaman (seperti pemikiran dan emosi) yang tidak disukai.</p> <p>ACT telah digunakan sebagai model psikoterapi dalam membantu mereka yang berlebihan berat badan atau obes. Klien yang menyertai program berasaskan ACT akan dilatih dengan enam kemahiran berhubung dengan pengalaman dalaman seperti emosi, pemikiran, sensasi tubuh dan lain-lain.</p> <p>Melalui kajian, kesejahteraan psikologi dalam kalangan peserta yang menerima ACT adalah lebih baik di samping lebih efektif dalam menurunkan berat badan (Iturbe et al., 2022). Antara manfaat terapi ini kepada peserta kajian adalah pengurangan tabiat makan berlebihan dan makan mengikut emosi (Lawlor et al., 2020). Selain itu, kekerapan tabiat makan secara sedar dan tabiat kawal pengambilan makan juga meningkat (Lawlor et al., 2020).</p> <p>Mengapa pendekatan kaunseling diperlukan dalam ubah tabiat makan? Mari fahami realiti cabaran diet.</p> <p>40</p>	<p><b>Rujukan</b></p> <p>Bukowska, M. (2022). Impaired Brain Insulin Signalling, a Potential Cause of Obesity: A Review of Literature. <i>Clinical Diabetology</i>, 11(5), 346–351. <a href="https://doi.org/10.5603/DK.a2022.0040">https://doi.org/10.5603/DK.a2022.0040</a></p> <p>Forman, E. M., &amp; Butryn, M. L. (2016). <i>Effective Weight Loss : An Acceptance-Based Behavioral Approach (Workbook)</i>. Oxford University Press.</p> <p>Garaulet, M., Gómez-Abellán, P., Albuquerque-Béjar, J. J., Lee, Y. C., Ordoñas, J. M., &amp; Scheer, F. A. J. L. (2013). Timing of food intake predicts weight loss effectiveness. <i>International Journal of Obesity</i>, 37(4), 604–611. <a href="https://doi.org/10.1038/ijo.2012.229">https://doi.org/10.1038/ijo.2012.229</a></p> <p>Gonzalez, J. T. (2017). Breakfast for the Prevention and Treatment of Obesity. In <i>Practical Guide to Obesity Medicine</i> (Vol. 55, pp. 241–249). Elsevier Inc. <a href="https://doi.org/10.1016/B978-0-323-48559-3.00022-1">https://doi.org/10.1016/B978-0-323-48559-3.00022-1</a></p> <p>Harris, R. (2008). <i>Introductory ACT workshop handout</i>. <a href="https://www.actmindfully.com.au">https://www.actmindfully.com.au</a></p> <p>Harris, R. (2019). <i>ACT made simple</i> (2nd ed.). New Harbinger Publications.</p> <p>Hayes, S. C., Strosahl, K. D., &amp; Wilson, K. G. (2012). <i>Acceptance and Commitment Therapy : The process and practice of mindful change</i>. Gullford Press.</p> <p>Institute for Public Health. (2020). Non-communicable diseases, healthcare demand and health literacy-key findings. In <i>National health and morbidity survey (NHMS) 2019 : Non-communicable diseases, healthcare demand, and health literacy - Key Findings</i>.</p> <p>Iturbe, I., Echeburúa, E., &amp; Malz, E. (2022). The effectiveness of acceptance and commitment therapy upon weight management and psychological well-being of adults with overweight or obesity: A systematic review. <i>Clinical Psychology and Psychotherapy</i>, 29(3), 837–856. <a href="https://doi.org/10.1002/cpp.2695">https://doi.org/10.1002/cpp.2695</a></p> <p>319</p>
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## Tentang Buku Ini

Bagaimana buku ini membantu anda membentuk psikologi yang fleksibel?

Pada **Bahagian 2** (Bab 4 - Bab 7), buku ini akan membentangkan tiga bab berkenaan kemahiran psikologi menggunakan model *Acceptance & Commitment Therapy* iaitu:

- **Bab 4: Membuat keputusan penuh kesedaran**
  - Kemahiran kesedaran minda
  - Kemahiran ambil perspektif terhadap pengalaman dalaman
- **Bab 5: Perjelaskan nilai dan bangunkan komitmen**
  - Kemahiran perjelaskan nilai
  - Kemahiran komited bertindak
- **Bab 6: Bersikap terbuka pada pengalaman**
  - Kemahiran lepaskan diri daripada perangkap fikiran
  - Kemahiran buka ruang terhadap pengalaman

Kandungan buku ini mengetengahkan kemahiran yang perlu dipraktikkan. Justeru, anda disarankan agar membaca satu subtopik dalam sehari dan fokus pada latihan dalam subtopik berkenaan pada hari tersebut. Dalam bahasa mudah, baca satu subtopik sahaja dalam satu hari.

Untuk mendapat manfaat, laksanakan latihan-latihan yang disediakan dalam setiap subtopik.

Jika anda perlukan senarai semak bagi melihat perkembangan diri mengikut program, satu buku kerja yang disusun mengikut hari boleh didapatkan melalui pautan atau kod QR pada muka surat ini. Buku kerja ini hanyalah "bonus" dan kandungannya sama dengan apa yang ada dalam buku ini.



Dalam **Bab 7**, gambaran menyeluruh model psikologi yang fleksibel akan diterangkan dan integrasi kesemua kemahiran dirangkum melalui lembaran kerja "Jurnal Hijrah".

**Bahagian 3** (Bab 8 dan Bab 9) pula akan menyajikan topik khas berkaitan nilai wahyu dan prinsip tabiat makan sihat.

Khusus kepada yang berminat bagi menggarap nilai wahyu, **Bab 8** akan memperkenalkan empat mengenai perintah makan dalam al-Quran. Informasi daripada Bab 8 ini boleh menjadi input bagi pembaca yang mahu melatih kemahiran perjelaskan nilai (Bab 5).

Maklumat ringkas mengenai tabiat makan sihat juga terkandung dalam **Bab 9**. Input daripada bab ini boleh membantu pembaca memilih tabiat yang mahu dibangunkan untuk melatih kemahiran komited bertindak (Bab 5).

Figure 3 Worksheet for learning plan



Justeru, tatkala beri perhatian pada kelima-lima deria, minda kita diajak fokus pada waktu sekarang. Ini beri kesedaran bahawa pada setiap detik, jasad ada peluang buat pilihan secara sedar. Bukan sentiasa automatik akibat ikut desakan dalam diri semata-mata.

### Kemahiran Perlukan Latihan

"Nanti, apabila saya sedih, saya akan cuba hadirkan kesedaran supaya tak cepat cari minuman manis nak hilangkan kesedihan."

Adakah anda pernah merancang sedemikian?

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anda dalam kawalannya untuk berpatah balik ke perhentian sebelum ini. Ini pasti mengundang rasa marah penumpang-penumpang lain.

Jika anda menuruti keinginan penumpang kedua, anda mengizinkan menukar destinasi. Dia lebih berkuasa menentukan hala tuju dan kesannya, anda tidak akan sampai ke destinasi.

Bagaimana jika anda menghentikan bas untuk bergelut dengan penumpang-penumpang tersebut bagi mengharapkan mereka tidak lagi mengganggu anda? Kesannya, anda tidak maju dan pemanduan dihentikan sedangkan penumpang-penumpang tersebut boleh jadi semakin bising. Keadaan semakin tegang.



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Figure 2 Illustration