A HEALTHCARE ENHANCEMENT FOR SENIOR CITIZENS USING FOREST THERAPY (SHINRIN-YOKU) CONCEPT AT HEATH FOREST OF TERENGGANU

BY

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ABSTRACT

The growth of senior citizens is one of the most significant demographic trends all over the world. With the global growth of elderly populations, emphasizing the increasing needs of older people in consideration of the public interest presents a novel challenge for developing a park for senior citizens. In Malaysia, the population has almost quadrupled over the past five decades, growing from 7.4 million in 1957 to 27.4 million in 2010. The population has always been on the world's attention, especially fertility, birth, death, migration, education, poverty and ageing. Forest therapy, also known as Shinrin-Yoku, is also considered a form of nature therapy. It functions through exposure to natural stimuli that render a state of physiological relaxation. In this research, the concept of forest therapy is used to enhance the wellness of the senior citizen by implementing therapeutic recreational elements that are suitable for them. In order to achieve the objectives of this research, the methodology used for the study consists of in-depth interviews with two expert gerontologists, pilot study research, observation, conducting survey questionnaire with 200 respondents, and conducting fieldwork such as soil and water sampling at heath forest. This research's findings include the senior citizen's behaviour on their barrier and limitation in participating in physical activities, mainly because of their ageing sicknesses such as dementia, joint pain, and other elderly diseases. Other than body ailments, the elderly's limitations and barriers are lack of motivation, risk of getting injuries, and shyness of carrying activities in public areas. Their design preferences are identified according to their physical health needs and preferences that have been surveyed through questionnaires distributed to create a senior citizen's space preferred by this targeted group. Identifying their design preferences can motivate them to participate in physical activities hence, improving their wellbeing. Then, integrating the landscape character and environment of heath forest into forest therapy concept by identifying the forest's landscape and environmental quality index. The senses of senior citizen's stimulation, sight, sound, touch, and scent are discussed to integrate with the landscape character of heath forest, enhancing seniors' wellness by implementing therapeutic elements. Based on the data collected during the research, it is found that any form of natural attributes activities can help to enhance the wellness of the elderly society through implementing therapeutic recreational elements based on the user's limitations and preferences. It is recommended that the forest therapy concept emerges as an approach that helps enhance the wellness of the senior citizen. This recommendation is to ensure that this study achieved its aim to integrate a forest therapy (Shinrin-Yoku) concept in heath forest that helps enhance the senior citizen's wellness by implementing therapeutic recreational elements suitable for them.

Keywords: Senior citizens, Forest therapy, Wellness, Elderly, Heath Forest, Ageing society.

خلاصة البحث

يعد نمو المسن أحد أهم الاتجاهات الديموغرافية في جميع أنحاء العالم. مع النمو العالمي للسكان المسنين، فإن التأكيد على الاحتياجات المتزايدة لكبار السن مع مراعاة المصلحة العامة يمثل تحديًا جديدًا لتطوير حديقة لكبار السن. في ماليزيا، تضاعف عدد السكان أربع مرات تقريبًا على مدار العقود الخمسة الماضية، حيث ارتفع عدد سكانه من 7.4 مليون في عام 1957 إلى 27.4 مليون في عام 2010. لطالما كانت قضية السكان محل اهتمام العالم، وخاصة الخصوبة والولادة والوفاة والهجرة، والتعليم والفقر والشيخوخة. يعتبر علاج الغابات، المعروف أيضًا باسم Shinrin-Yoku ، شكلاً من أشكال العلاج الطبيعي حيث يعمل من خلال التعرض للمنبهات الطبيعية التي تؤدي إلى حالة من الاسترخاء الفسيولوجي. في هذا البحث، يتم استخدام مفهوم العلاج بالغابات لتعزيز عافية كبار السن من خلال تنفيذ عناصر علاجية ترفيهية تناسبهم. من أجل تحقيق أهداف هذا البحث، تتكون المنهجية المستخدمة في الدراسة من مقابلات متعمقة مع اثنين من خبراء الشيخوخة، والبحث بدراسة تجريبية، والملاحظة، وإجراء استبيان مسحي مع 200 مستجيب، وإجراء نشاط ميداني مثل عينات التربة والمياه في غابة صحية. تتضمن نتائج هذا البحث سلوك المواطن المسن في حاجته ومحدودية مشاركته في الأنشطة البدنية التي ترجع بشكل أساسي إلى أمراض الشيخوخة مثل الخرف وآلام المفاصل وأمراض المسنين الأخرى. بخلاف معاناتهم من أمراض الجسم، تتمثل قيود كبار السن والعوائق من وجهة نظرهم في الافتقار إلى الحافز، وخطر التعرض للإصابات، والخجل من ممارسة الأنشطة في الأماكن العامة. لإنشاء مساحة لكبار السن مفضلة من قبل هذه المجموعة المستهدفة، يتم تحديد تفضيلات التصميم الخاصة بهم وفقًا لاحتياجاتهم الصحية البدنية وتفضيلاتهم التي تم مسحها من خلال الاستبيانات التي تم توزيعها. يمكن أن يؤدي تحديد تفضيلات التصميم الخاصة بهم إلى تحفيزهم على المشاركة في الأنشطة البدنية وبالتالي تحسين رفاههم. بعد ذلك، يتم دمج طبيعة المناظر الطبيعية والبيئة للغابات الصحية في مفهوم العلاج بالغابات من خلال تحديد مؤشر جودة البيئة والمناظر الطبيعية للغابات. كما تتم مناقشة حواس تحفيز كبار السن وهي البصر والصوت واللمس والرائحة لتتكامل مع طبيعة المناظر الطبيعية للغابات الصحية،

وبالتالي تعزز عافية كبار السن من خلال تنفيذ عناصر علاجية. بناءً على البيانات التي تم جمعها أثناء البحث، وجد أن أي شكل من أشكال أنشطة السمات الطبيعية يمكن أن يساعد في تعزيز عافية مجتمع المسنين من خلال تنفيذ عناصر ترفيهية علاجية بناءً على قيود المستخدم وتفضيلاته. من المستحسن أن يظهر مفهوم العلاج بالغابات كنهج يساعد على تعزيز عافية كبار السن. هذه التوصية هي التأكد من أن هذه الدراسة قد حققت هدفها في دمج مفهوم العلاج بالغابات (Shinrin-Yoku) في الغابة الصحية الذي يساعد على تعزيز عافية كبار السن من خلال تنفيذ عنصر ترفيهي علاجي مناسب لهم.

الكلمات المفتاحية: مواطن كبير السن، علاج الغابات، العافية، كبار السن، غابة الصحة، مجتمع الشيخوخة.

APPROVAL PAGE

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DECLARATION

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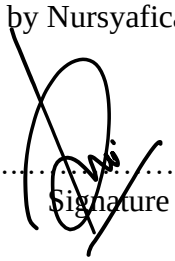

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Signature Date

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CHAPTER ONE

INTRODUCTION

1.1 RESEARCH BACKGROUND

The growth of the older population is one of the most significant demographic trends worldwide. With the global development of elderly folks, emphasizing older people's increasing needs in public interest considerations presents a novel challenge for developing a park for senior citizens (Suhairi et al, 2017). The population has always been on the world's attention, especially fertility, birth, death, migration, education, poverty and ageing. According to Malaysia's Public Service Delivery and Local Government, senior citizens are defined as individuals aged 60 years and above. This definition is in line with the definition given by the World Assembly on Ageing 1982 in Vienna. The definition of senior citizens in Malaysia as defined by Jabatan Perkhidmatan Awam, the concept of "old" in the National Policy on Senior Citizens are those above the age of 60 years. "Old" may be in the form of physiological, biology or functional aspects. For example, in his 90s, Dr. Mahathir thinks and acts like a young visionary and creative person.

Based on Malaysia's Population and Housing Census, the population has almost quadrupled over the past five decades, growing from 7.4 million in 1957 to 27.4 million in 2010. The number of people aged 65 years and over in Malaysia has increased steadily since the 1970s, and it is projected that the number will triple from 2.0 million today to more than 6.0 million by 2040. Although much smaller in total size, the number of people ages 80 and over is projected to grow more than fourfold from 0.3 million today to nearly 1.4 million by 2040. While the youngest member of the baby boomer

generation is not yet entering the ageing boomers, the recent decline in fertility has accelerated the older population's share. In 1970, only 3.3 percent of the population was aged 60 years, and over half of the population (44.5%) was under 14. By 2017, children make up less than one-fourth of the total population (24.1%).

Meanwhile, those aged 60 years and over comprise 6.2 percent of the total population. Malaysia will have a nearly equal share of the young (18.6%) and older population (14.5%) in 2040. By this time, there will be three older persons for every 20 people. It shows that the population age structure in future has changed with a more elderly population (Population and Housing Census Peninsular Malaysia1957/ Population and Housing Census Malaysia 1970/ Population Projections Malaysia 2010-2040).

Apart from an increase in the aged population, the aged of the elderly also increase their life expectancy (Mafauzy, 2000). It is also expected that the proportion of the aged population is higher in the urban than the rural area. This change in the aged population's demographic pattern will also influence the distribution of health care resources. Furthermore, it is noticeable that the elderly are less healthy than the youngster. Hence an increase in the population associated with ill health is the aged group.

Malaysia's health care system is primarily geared toward short-term care and hospitalisation, while the ill elderly with chronic diseases may require long-term care health. About the prevention of diseases and disabilities of the elderly, healthy lifestyle promotion would benefit them. Starting from the young adult, they would generally continue to become healthy elderly citizens if healthy lifestyles are continuing. Other than minimising the illness and disabilities, this would enhance their independence in their daily activities.

Forest therapy, also known as Shinrin-Yoku, is also considered nature therapy (Hansen et al., 2017). They define nature therapy as “a set of practices aimed at achieving ‘preventive medical effects’ through exposure to natural stimuli that render a state of physiological relaxation and boost the weakened immune functions to prevent diseases.”

The users are engaged with all their senses during forest bathing through the forest's fragrance, green colours of the plants, the murmuring of streams and birds singing, eating forest food and touching the bark of the trees. The concept of Shinrin-yoku starts with a stressed state of the user at the top. It is pointed out to the restorative effects where the uses of nature such as trees, forests, flowers, chirping of birds help give out relaxation and recovery.

According to L. S. Lawrence (2003), Forest was classified into several types according to its unique characteristics. Such as tropical forests, subtropical, montane, heath forests and others. The forest's natural environment is considered essential in promoting health models as it is closely associated with human health issues. Climate, soil, and water are the main factors influencing the environmental factors in distributing plants and vegetations in the country. Saw (2010) also mentioned that Peninsular Malaysia is generally regarded as per-humid (i.e. wet throughout the year) with short dry periods with a relatively uniform climate. However, northwest Peninsular Malaysia only experiences a few dry months each year.

Heath forest is fragile and sensitive towards its environment and human disturbance (Hussein, 2014). Therefore, creating a recreational forest environment at heath forest must be strategised carefully in order to achieve the goal of this study which is to integrate a forest therapy (Shinrin-Yoku) concept in heath forest that helps to enhance the wellness of the elderly society by implementing therapeutic recreational

element that is suitable for them while conserving the character of the forest. Furthermore, such as nature appreciation can help stimulate and increase users' awareness of natural environments (Hussein & Noorizan, 2007).

1.2 PROBLEM STATEMENT AND ISSUES

1.2.1 The increasing number of the senior citizen age group is a sign of increasing people that need health care support

The world population represent 12% of the senior citizen, and it is expected to double by 2015 and triple in 2100 (Tavares et al., 2017). The increase of this population age group is a sign of increasing people who need health care for various diseases. The existing health care institutions for the aged will not be adequate to meet the demand in the future. More hospitals or other healthcare institutes would be needed to build and services that need to be introduced or further developed, especially concerning the elderly. The increase is inevitable. They will have their unique problems and generate new challenges and demands on health and social services (Mafauzy, 2000).

Physical activity was considered as one key element in maintaining health status. Being active throughout the majority of one’s lifetime can influence overall health and well-being. Lower mortality rates occur among those who become physically active late in life compared to those who were active in early life (Singh & Kiran, 2014).

1.2.2 The elderly that lives with an unhealthy lifestyle are shifted away from being healthy and active

Researchers show that the elderly with active lifestyles are often as healthy as fewer active people aged 15 years younger (Singh & Kiran, 2014). Having a healthy lifestyle through physical exercise is the best way to live a healthy and long life. Regular physical activity reduces the effects of ageing in muscle strength, balancing, mobility and

flexibility. Other than that, it also reduces the risk of heart problems while keeping the elderly happy and healthy.

Regular physical activity comes in many forms, such as light walking, doing housework chores, and gardening. As people get old, their participation in leisure and recreation activities changes because of life cycle transitions such as retirement from paid work to the “empty nest” experienced by parents as children grow up and leave the house. Hence, the elderly have enough time to do what they want and access leisure and physical activity opportunities. Therefore, recreation plays a vital role in keeping the well-being of the elderly and enhancing their quality of life and increasing the opportunities in socializing among them.

1.2.3 Negative environment effects the participation of outdoor activities

Participating in outdoor activities is one of the critical roles in maintaining the well-being of the elderly. Involvement in various recreation can satisfy a variety of needs, according to one person. Apart from having opportunities to socialising, the elderly would use their skills and talents developed throughout their lifetime or learn new skills (Singh & Kiran, 2014).

Hence, having a good and positive environment would boost elderly participation in doing outdoor activities. Numerous studies overseas, especially in Japan, prove the impact of having the right environment such as forest would boost people's physiological and psychological health (J. Lee, Q. Li, et al. 2012). On the other hand, the hostile environment of the surrounding such as noise and air pollution, could affect the participation of the elderly.

1.3 RESEARCH QUESTIONS

1. What are the elderly's barriers and limitations limiting them to be less or less involved in physical activities?
2. What are the elderly's concerns and preferences in participating in physical activities in the park?
3. How is the forest therapy concept model being applied in the design?

1.4 RESEARCH AIM AND OBJECTIVES

This research aims to integrate a forest therapy (Shinrin-Yoku) concept in heath forests that enhances the wellness of the senior citizen by implementing therapeutic recreational elements suitable for them. To achieved this, the following objectives are formulated:

1. To understand the **behaviour of the senior citizen** on their **barrier and limitation** related to being less or not involved in physical activities.
2. To study the **design preferences of the senior citizen** in creating an elderly's space according to their physical health needs.
3. To **integrate forest therapy concept in heath forest** suitable for the senior citizen based on the design guidelines.

1.5 RESEARCH HYPOTHESIS

With the global trend of population ageing, the need to integrate the health of older people with the environment is vital by integrating the concept of Shinrin-Yoku into heath forest as a model to create a space that can enhance users' wellness. Based on the design guidelines that have been extracted during the methodology phase.

1.6 RESEARCH SCOPE

This study is based on objective 1 and 2, which is to study the behaviour of the elderly on their barrier and limitation and their design preferences in creating elderly's space. Therefore, 200 samples of the questionnaire that focuses on senior citizens that are currently experiencing their pre-elderly phase (50-60 years old) and elderly that are achieving their elderly's phase (60 years and above) in Malaysia will be taken to understand their behaviour, limitation and barrier to create a space that is meant to reach within their capabilities.

Next, based on objective three, which is to integrate the forest therapy concept in heath forest suitable for the elderly, the landscape character of heath forest is studied and analysed to understand their nature and environment. Lastly, the concept of forest therapy (Shinrin-Yoku) is applied by developing a design guideline based on the character of the heath forest and the elderly's behaviour.

1.7 ORGANIZATION OF THESIS

This thesis comprises 5 chapters. This section provides a brief review of the thesis structure. The arrangement of chapters in this research thesis is as follows:

Chapter 1 (Introduction) is vital to identify the issues and methods used in the research. The background study of this research was briefly discussed. The problem statement, research questions, aim, objectives, hypothesis and scope were clarified.

In chapter 2 (Literature Review), the discussion is focused on the study of the research topic, healthcare enhancement for elderly using forest therapy to establish continuous health improvement strategies towards a sustainable and healthy ageing society. This chapter will guide the researcher as a resource that can give a deep understanding of the research topic.

In chapter 3 (Data collection and Analysis), it was mainly focused on data collection methodology. More precise techniques and approaches will be discussed in this chapter. It would act as a guideline to the researcher on collecting data for the topic. Different methods were used to achieve the proposed aim and objectives outlined in this research, as mentioned in chapter 1.

In chapter 4 (Findings and discussion), data analysis and results were inserted in this chapter. The collected data had been analysed and presented in graphs to show clear distinctions between one data and another. At the end of the analysed data, the parallel with the research aim and objectives would be a solving tool that rises from the study. In the end, the conclusion and recommendations for the topics would be based on the data analysis.

In chapter 5 (recommendations and conclusion), a design recommendation was given to solve the rising issue mentioned in chapter 1. Therefore, all the steps and flows taken from chapter 1 to chapter 4 were concluded into one chapter, which is chapter 5. In this chapter, the research topic should have achieved the proposed aim and objective outlined in chapter 1. Therefore, all the issues that are rising will hopefully be solved.

1.8 SUMMARY OF CHAPTER

To summarise, this chapter acts as an outline for overall research prepared by the researcher before going into the details of each study. These could lead the researcher to be more structured while conducting the studies and lead the researcher to be more knowledgeable. Thus, further study needs to be done by looking more at the literature review and discussing it in the next chapter to better understand this matter.