



**DETERMINATION OF DESIGN CRITERIA FOR
DEVELOPING DEMENTIA DAY CARE CENTRE IN
MALAYSIA**

BY

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ABSTRACT

The objective of the research firstly is to identify what are the suitable design criteria of dementia day care centre and assistive devices for the elderly. Secondly, it is to determine the external and internal space planning of the current dementia day care centre and lastly to propose a design checklist to develop and enhance the dementia day care centre services with the help of assistive devices. Advanced assistive technologies have been known to have a positive impact on dementia in the elderly. But to date, such advanced devices have not been used in dementia day care centres in Malaysia due to a lack of knowledge. For this reason, the researcher decided to investigate this issue further in terms of physical building elements and the devices used by the elderly to help them with their daily routines. A total of three case studies were drawn from a sample, in which are the dementia day care centres located in Peninsular Malaysia were examined. This research uses both quantitative and qualitative approaches. Two instruments were developed to collect data; the first instrument is a checklist adopted from previous studies to profile data related to observations on the physical building elements of the day care centres. The second instrument is a questionnaire. The findings indicate that the physical elements of the building do have an impact on individuals who suffer from dementia in terms of their daily routine and their brain activity. There is also a lack of availability for advanced assistive technologies in all the dementia day care centres surveyed. However, the caretakers of the dementia day care centre do have other conventional assistive devices that help the elderly with their lives. The findings show that the equipment used by the dementia day care centres are not advanced, though, it has fulfilled their target to provide brain activity for the elderly to allow them to remain active and independent. Future research may explore the possibility of redesigning conventional assistive devices to the Malaysian context and how to modify the product to a better design.

خلاصة البحث

تهدف هذه الدراسة أولاً، إلى تحقيق الاحتياجات الحالية لدار رعاية المسنين المعتمدين ونوعية الحياة للمسنين المقيمين هناك. ثانياً، تحديد المعايير والمقاييس المناسبة لتصميم دار رعاية المسنين المعتمدين. وأخيراً، اقتراح قائمة تدقيق التصميم في تطوير وتحسين خدمات دار رعاية المسنين المعتمدين بمساعدة الأجهزة المساعدة. وقد أثبتت البحوث العلمية بأن استخدام التكنولوجيا المساعدة المتطورة لها أثر إيجابي على المسنين المعتمدين، إلا أن تطبيق هذه الأجهزة المتطورة في دار رعاية المسنين المعتمدين بماليزيا معدوم حتى الآن. ومن هذا المنطلق، تطرقت الدراسة إلى تحقيق العناصر الفيزيائية للبنية والأجهزة المساعدة المستخدمة لدى المسنين في حياتهم اليومية. وتم اختيار مجموعة من ثلاثة دراسات للحالة كعينة للدراسة، وهي دور رعاية المسنين المعتمدين في شبه جزيرة ماليزيا باستخدام المنهجين الكمي والكيفي. وتم اعتماد أداتي القياس لجمع المعلومات؛ أولاً، قائمة التدقيق المعتمدة في الدراسات السابقة لتصنيف المعلومات المتعلقة برصد العناصر الفيزيائية للبنية في دار الرعاية. ثانياً، الاستبيان بتكرار بعض الأسئلة المعتمدة في الدراسات السابقة أيضاً. وتوصلت النتائج إلى أن العناصر الفيزيائية للبنية لها أثر كبير على المصابين بالخرف من حيث حياتهم اليومية ونشاطاتهم العقلية. ومن ناحية الأجهزة المساعدة المتطورة، فهي غير متوفرة في جميع دور رعاية المسنين المعتمدين عند المعاينة. وعلى الرغم من ذلك، استخدم مديروا دور رعاية المسنين المعتمدين الأجهزة المساعدة التقليدية لمساعدة المسنين في حياتهم اليومية. كما توصلت النتائج إلى أن الأجهزة المستخدمة في دار رعاية المسنين المعتمدين ليست متطورةً ومع ذلك حققت غرضها في توفير النشاطات العقلية للمسنين كي يكونوا نشطين ومستغنين عن غيرهم. وأوصت الدراسة بأن تكون الدراسات المستقبلية في إعادة تصميم جميع الأجهزة المساعدة التقليدية حسب الظروف الماليزية وكيفية تعديل الأجهزة الحالية إلى التصميمات الأفضل.

APPROVAL PAGE

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This research revolves around the enhancement of dementia day care centre as well as the usage of assistive devices by the elderly in dementia day care centre in Malaysia. This chapter will discuss the background of the research, which highlights the issues that lead to the problem statement. The aim and objectives of the research will then be derived as well as the research questions. The significance and limitation of the study will also be elaborated. In order to give a clear idea on how the research will be conducted, the structure of the thesis and the research methodology for this study will be briefly explained.

1.2 BACKGROUND

Worldwide, our demographic population statistics have shown a massive shift in the elderly population, which becomes a major concern in many industries, especially in built environment. This huge change in demographic has led most countries to strive for the betterment of their senior citizens in terms of the social and economic infrastructure in their country. The same situation can also be felt in Malaysia as statistics released by the Department of Statistics Malaysia, 2012 indicates that the growth rate of the elderly or senior citizens in this country is increasing at least 1.3% each year. Due to the demographic changes in the population nowadays, the elderly is often associated with all sorts of impairments and to a significant extent, the

estimation of the number of elderly with dementia is also expected to increase (Harrison & Dalton, 2013).

In Malaysia, the government had put thoughts into this matter pertaining the growing number of the elderly; hence, the Department of Social Welfare has formulated a National Policy for the Elderly and also Action Plan Strategies to develop community awareness towards the ageing phenomenon. This National Policy, as well as Action Plan Strategies, aim to help citizens to prepare for their ageing years. However, according to Li and Khan, 2012, some of the content of the National Policy did not meet the needs of the elderly in a care centre.

Above that, bringing the circumstances that our elderly are also affected by dementia, the solution to this problem should be managed instantly. It is inappropriate for a care centre to place normal elderly with dementia diagnosed elderly under one roof as it could lead to depression to the caregivers or perhaps to other care centre residents. It is certain that elderly with dementia need a special day care or care centre that can support and balance their living towards a healthy lifestyle.

1.3 PROBLEM STATEMENTS

As estimated by the statistics department 2008, the total population in Malaysia with dementia problem is approximately 2.7 million. This has become a significant issue as the World Health Organisation (2015) stated in their research that the population across the world that is diagnosed with dementia will triple by the year 2050. The raised problems regarding this huge number of elderly dementia patients are:

- i. Lack of specific dementia day care centre in Malaysia and most elderly dementia patients rely on the local government hospital services, which resulted in overcrowded wards.

According to Kow (2009), the Honorary executive secretary of the Alzheimer's disease Foundation Malaysia, dementia care in Malaysia is provided by the government general hospitals, mainly the Psychiatric ward, Geriatric ward and also neurological ward. Due to the almost free facilities and services given by the local government hospitals, the wards are overcrowded with patients. This resulted in less curative activities going around as the doctors and nurses have a hard time handling a great number of patients. This hospitalisation or institutional type of care option is then seen to be less effective as it denotes a lack of healing environment in delivering services for elderly dementia patients.

Apparently, there is only three-day care centre for elderly dementia patients that are operated by an affiliate of the Alzheimer's disease Foundation Malaysia. Even with their long-term objective that is to provide at least one-day care centre in every state, it proves that we are still struggling with this kind of facilities for elderly in this cohort. The urgency to build more day care centres for elderly dementia patients is highly needed due to many elderly being diagnosed with dementia day by day (Kow, 2009).

- ii. Lack of research on the special needs of dementia people which resulted in common assistive devices found to be used by the dementia day care centre where there should be more assistive technology devices being creatively designed by the designers to help the people.

Locally, there is an inadequate amount of research pertaining to special day-care or care centre for the elderly with dementia and we are still far behind in terms of

the technology used by other countries in improving the elderly's condition. Through observation, the current existing dementia day care centres use the same assistive devices like any other normal elderly care centre here in Malaysia. This means that the entire burden is placed upon the caregivers directly to assist the elderly's daily activities. Since the National Policy has been criticised for not being up to par with the standard of wellbeing issues in the elderly care centre (Li & Khan, 2012), there is doubt that the dementia day care centre is being properly thought as there are more details that need to be taken into account.

- iii. The lack of knowledge by the designer in designing suitable environment for the elderly, which affects the emotional aspects of the elderly.

Based on Authors Lee *et. al.* (2007), failure in designing appropriate surroundings for the elderly, especially those with dementia issues could trigger an insecure feeling which will result in negative effects of their well-being and emotional disturbance. Not only will that affect the individual, but also the caregivers and fellow residents living in that community as well. Author Abbas & Saruwono (2012) mentioned that based on an assessment done on outdoor facilities, there is an insufficient number of facilities provided and those do not encourage healthy living.

Even though the ideal solution to this problem is that the elderly is cared by their families at home, instead of day care or institutions, this kind of facilities however, is needed the most by them without them even realising. For severe dementia problems such as in the case of Alzheimer's disease progression, those who are diagnosed with this disease will eventually forget and have difficulties in performing basic tasks such as buttoning the shirt, washing hands after eating and so forth. Moreover, they usually have unstable emotions as their brains have problems processing information and this will subsequently cause depression to the caregivers

or family members. This is part of the reason why they need someone who is fully trained to handle this situation as some family members sometimes need to learn to adapt to this kind of changes that happen to their loved ones.

Therefore, it is crucial for the dementia day care centre to resemble home environment so that the elderly can comfortably adjust their lives without taking so much time and effort. It is also important for the designers to have some background knowledge on dementia before designing the care centre. With this basic guidance, the designers then will be aware of what they actually need in order to pursue with their design.

1.4 AIM AND OBJECTIVES

This study aims to provide a better environment for the elderly in dementia day care centre to make it more effective, which can upgrade the quality of their lives. In order to fulfil the above aim, the following objectives have been formulated:

- i. To identify the suitable design criteria of dementia day care centre and assistive devices for the elderly.
- ii. To determine external and internal space planning of the current dementia day care centre.
- iii. To propose design checklist in developing and enhancing the dementia day care centre services with the help of assistive devices.

1.5 RESEARCH QUESTIONS

Based on the problems and objectives stated above, three questions have been pointed out in order for the research to resume.

- i. What are the suitable design criteria of dementia day care centre?
- ii. What are the external and internal spaces of current dementia day care centre?
- iii. What are the design criteria that can be proposed to be included in a design checklist?

Table 1.1 Aim, objectives and research questions

AIM	OBJECTIVES	QUESTIONS
This study aims to provide a better environment for the elderly in dementia day care centre to make it more effective	1) To identify the suitable design criteria of dementia day care centre and assistive devices for the elderly	1) What are the suitable design criteria of dementia day care centre?
	2) To determine external and internal space planning of the current dementia day care centre	2) What are the external and internal spaces of current dementia day care centre?
	3) To propose design checklist in developing and enhancing the dementia day care centre services with the help of assistive devices	3) What are the design criteria that can be proposed to be included in a design checklist?

1.6 SIGNIFICANCE OF STUDY

Pertaining with the global epidemic of elderly with dementia in Malaysia specifically, the seriousness urged for an architectural solution to address the problem. Such facilities should be provided by the local government or non-governmental organisations to help ease the burden of the patients and their families regardless of their cultural beliefs, religions, and lifestyle. With the existence of such facilities, the elderly can continue living their lives as independent as they possibly could. Therefore, with this research, it is hoped that it will help the designers to plan dementia day care centre more explicitly as the needs of the elderly are carefully studied and analysed.

It would also help the policy and decision makers to reformulate the guidance or design policy for the developers and designers. By all means, this research would be part of the contribution to knowledge and would be a tremendous help for the academicians and students in expanding their knowledge in the related field.

1.7 RESEARCH METHODOLOGY

In order to reach the objectives stated above, this research will be based on primary and secondary data collection. In relation to the objectives that have been formulated earlier, Table 1.2 presents the types of methodology that will be implemented in order to achieve the objectives. The instruments used basically include case study, observation and survey questionnaire. Later, all the data gathered from the data collection are analysed through the triangulation method to correspond to the data obtained from both questionnaire and observational work from the case studies.

Table 1.2 Types of methodology implemented for each objective

OBJECTIVES	METHODOLOGY	DATA SOURCE	METHOD OF ANALYSIS
<p>OBJECTIVE 1 To identify what the suitable design criteria of dementia day care centre and assistive devices for the elderly</p>	Literature review	Journals, books.	Content analysis
<p>OBJECTIVE 2 To determine external and internal space planning of the current dementia day care centre</p>	Case study	Case study 1 Case study 2 Case study 3	Microsoft Excel Content analysis
<p>OBJECTIVE 3 To propose design checklist in developing and enhancing the dementia day care centre services with the help of assistive devices</p>	Case study	Case study 1 Case study 2 Case study 3	Microsoft Excel Content analysis

1.8 STRUCTURE OF RESEARCH FRAMEWORK

Based on Figure 1.1, there are five stages of completing this research, which are presented in six chapters. The five stages of the study process are i) initial study ii) methodology iii) data collection method iv) data analysis and findings, and v) conclusion and recommendations.

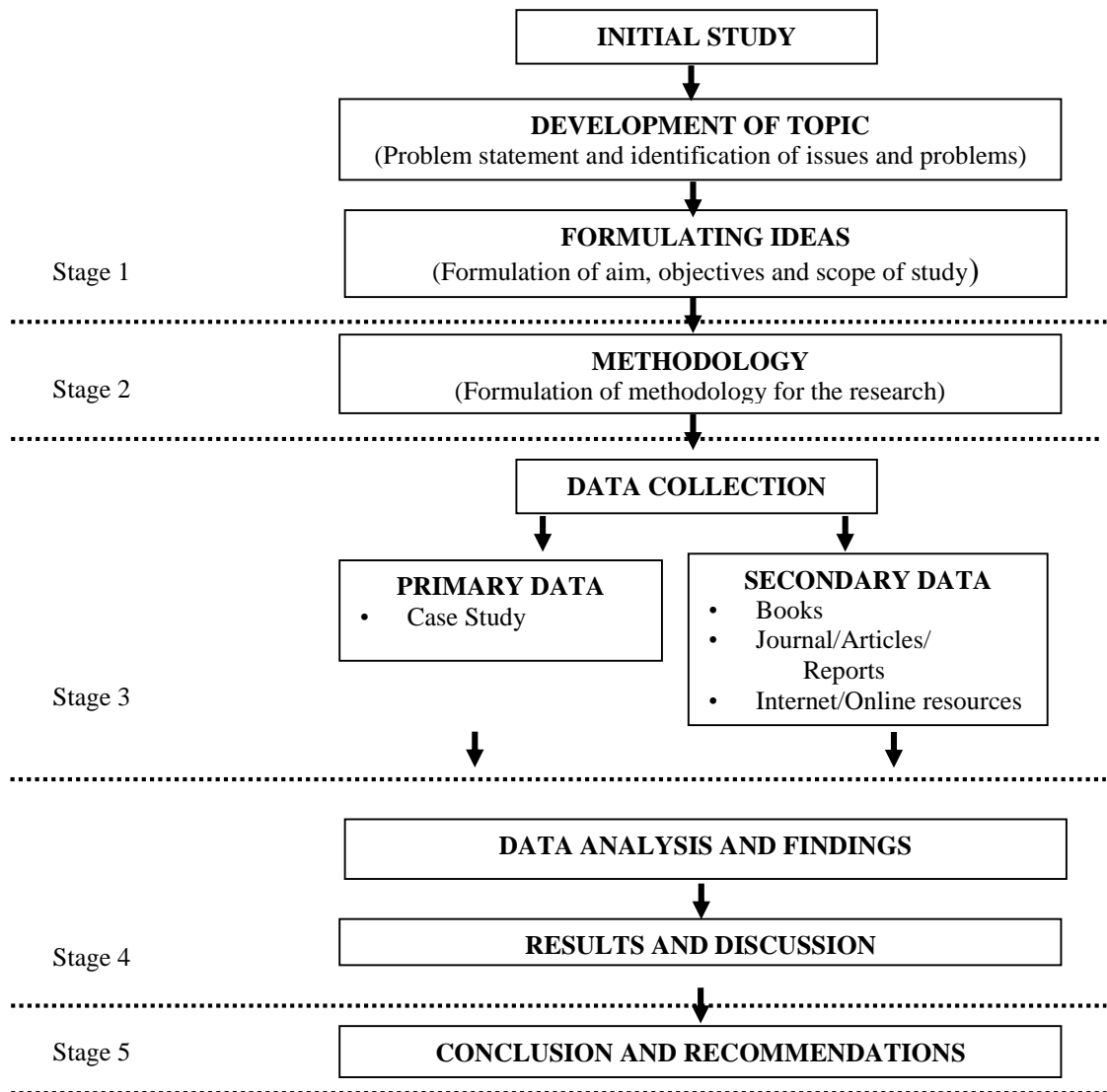


Figure 1.1 Research design framework

These stages demonstrate how the researcher conducts the study. In the beginning, the researcher has to do the initial study to identify the current issues in built environment that lead to this study by scrutinising the literature review. From there, the information is used to derive problem statement and identification of issues and problems. Later, the aim, objectives and scope of the study are formulated based on the problem statement. Before the study continues, the researcher needs to find out