

THERAPEUTIC LANDSCAPE: THE PIVOTAL ROLE OF OUTDOOR ENVIRONMENT IN CULTIVATING ELDERLY WELL BEING

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ABSTRACT

Globally, the rate of elderly population is expected to grow in great extent in the near future. In associates with their increasing of age, the health of elderly typically deteriorates, inducing the consequences of increased costs for caring and rehabilitation as the numbers of the elderly population grow. Thus, therapeutic landscape provides a distinctive and significant alternative in overcome these difficulties through associate them with natural environment. In this study, the author explored the effectiveness of therapeutic landscape and its surrounding environment with the elderly cognitive, emotional, social and physical condition in order to foster a healthy and active lifestyle of the community. The study was conducted in KompleksPenyayangBaktiSgBuloh and Dementia Home Care Kuala Langat. A thorough understanding about elderly impairments and illnesses as well as their outdoor environment and their elements will be identified in order to testify the prominence between these two mutual disciplinary. This research involved both observation and interview methods. Both of the techniques were used sequentially to get quantitative and qualitative data. The author used several assessments to confirm and to examine elderly behaviour patterns and their connection with the outdoor environment in cultivating health. Results obtained from the interview session with experts and professional involved with elderly shown their views on the possible benefits that a therapeutic landscape might have positive implications towards elderly and indirectly, it shall answer the research question. The data was then comprehensively analyzed in detail to outline a design recommendation in implementing an ideal outdoor environment for elderly. It is believed that the therapeutic landscape is effective and important in cultivating elderly health.

Keywords: *therapeutic, elderly, health, well being, outdoor environment*

INTRODUCTION

Human and nature have a strong genetically based need relationship. Nature has power to revive human body and mind especially in the case of elderly community to maintain healthy. One of the nature elements that potentially have impacts on elderly community is therapeutic landscape. An effectual landscape design has the capability to do much more rather than simply create an aesthetically pleasing environment.

Historically, therapeutic landscapes are spaces designed that aid for the restoration of an individual's well-being as noted by Brock (1998). The term 'therapeutic' means "*relating to the healing of disease*" (Oxford Dictionary – online). Therapeutic landscape is a term regularly adapted to landscape designed to assist recovery from illness and it is growing facet

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of landscape architecture today's. The study by Gerlach et al. (1998:2) defined therapeutic garden as a garden which "... is intended by its planner's to evoke rhythms that energizes the body, inform the spirit, and ultimately enhance the recuperative powers inherent in an infirm body or mind".

The KompleksPenyayangBakti located in Sungai Buloh and the Dementia Homecare Centre which is situated in TelukPanglimaGarang chosen because both spaces have potentials to be enhanced in a manner that celebrates the criteria of sustaining active and healthy elderly. Each of these sites has their own distinctive characteristics in terms of being outdoor environment therapy for elderly community.

Therefore, this study discusses and explores the effectiveness of therapeutic landscape and its surrounding environment with the elderly cognitive, emotional, social and physical condition in order to foster a healthy and active lifestyle of the community. Therapeutic is seen as an enhancement in overall quality of life that integrates the spiritual as well as the physical. Regardless of its definition, it may not be argued that therapeutic landscape plays a very pivotal role in restoring elderly well being.

The objective of the study was to:

1. Identify the outdoor physical activities for elderly
2. Examine the positive impacts of therapeutic landscape towards individual health and communal involvement among elderly.
3. Discover the role of surrounding landscape element as fundamental assisting element in restoration process

THERAPEUTIC LANDSCAPE: ITS ROLE AS OUTDOOR ENVIRONMENT IN SUSTAINING ELDERLY WELL BEING

Elderly and Health Relation

Ageing is basically can be understood as a chronology of biological, sociological, economic phenomenon. According to World Health Organisation (WHO), most developed world countries have accepted the chronological age of 65 years as a definition of 'elderly' or older person. At the moment, there is no United Nations standard numerical criterion, but the UN agreed cut-off is 60+ years to refer to the older population. Consequently, a Malaysian policy maker has adopted this policy and is officially used in planning for senior citizens in this country.

The health of older persons typically deteriorates in associates with the increasing of age, inducing greater demand for long-term care as the numbers of the elderly population grow. Hence, an ageing population brings with it special health challenges, namely preparing society as well the environment to meet the needs of an older population (Yeo P, 2012). Ageing does bring with it changes that require all manner of adjustments to daily living, depending on the health and mobility of the elderly person.

Key problems include:

- *Difficulty thinking* - understanding information, reasoning, planning, or making good judgment on issues
- *Memory* - usually short term memory is lost first and distant memories are better retained
- *Language* - the ability to speak is slowly lost
- *Mobility, motivation, emotions and behaviour* - which typically become erratic

Natural Environment and People's Health Interaction

According to Hunt et al (see Morris, 2003), he states that the implication of the natural environment on health benefits is complex and difficult to be separated. It is believed that contact with nature fosters physiological and psychological wellbeing as well as reduces the stress of urban dwellers seems to be as old as urbanisation itself as it stated by Ulrich (2002). In short, the natural environment contributes significantly to people's health through the interaction and unification with it.

Plants and natural landscapes may enhance human well-being by causing positive physiological and psychological responses, by affecting human behaviour or by modifying physical factors of the environment. Furthermore, natural open spaces or well-designed green spaces provide a place for recreation, social interaction and community action, in which can be highlighted as having a particularly positive influence on health and well-being.

Therapeutic Landscape as a Tool of Healing Process

Basically, therapeutic is based on its root word, therapy. Merriam-Webster Online Dictionary defines 'therapy' as a remedial treatment of mental or bodily disorder. Additionally, it also can be explained as an agency (as treatment) designed or serving to bring about rehabilitation or social adjustment. WilGesler first developed the concept and explicit

definition of therapeutic landscapes in the early 1990s, approximately 20 years ago (see Williams, 2007). He stated that:

“...therapeutic landscape is a healing place that includes such things as natural and human-made environments, historical events, cultural beliefs, social relations, and personal experiences which in many societies, there are closely tied to religion...”

The scientific and thorough study of the relationship between health, healing, and place has manifested itself in this fairly new topic of study, 'therapeutic landscapes (Kearns et al. (see Khachatourians, 2003). Although therapeutic landscape can be defined into several different meaning, however the common link is that foundation of the meaning specifically focus on healing, equivalently imply to the word relaxation, curing, meditation and restoration (Thesaurus Online).

Some of the newest research on therapeutic landscapes has centred on a variety of topics and environments, including holistic medicine, children's camps, hospitals and home. There have also been several offshoots of research in nearby disciplines such as environmental design for Alzheimer's and dementia patients and horticultural therapy.

METHODOLOGY

In studying the therapeutic landscape and its pivotal role of outdoor environment in sustaining elderly well being, primary data and secondary data were collected. The techniques used for gaining primary data at both sites were observation and interview. Meanwhile, the secondary data were collected through review on relevant studies.

Site Selection

1) **KompleksPenyayangBakti, Sungai Buloh**

A case study approach was chosen to allow more understanding on the site in order to identify the suitability and practicality of horticulture activity towards elderly community.

Unlike other country like America, Australia and United Kingdom that are very prominent in practicing horticulture

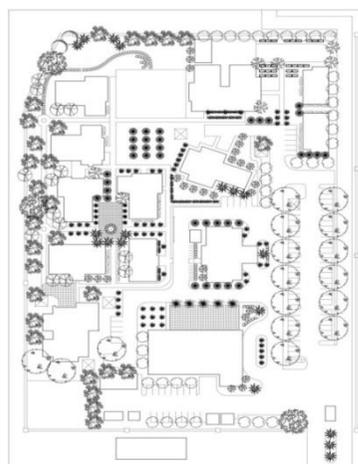


Figure 1: site plan of KompleksPenyayangBakti, Sg. Buloh

programmes and modules as therapy towards impairment and disabled individuals, Malaysia is relatively new in this method. Thus, there are some limitations in finding site as the case study for the research. However, KompleksPenyayangBakti, Sungai Buloh has been chosen due its facilities that provide a space for gardening activity for the elderly residents since its establishments in 2003.

2) Dementia Homecare Centre, TelukPanglimaGarang

The site was chosen because this homecare is specially built in 2011 to accommodate people living with Alzheimer's disease (AD) only. Since the subject of the study is related to Alzheimer's people, hence, this homecare centre seems perfect to be the site for the study. Then, a study was conducted in order to identify the essentiality of having therapeutic garden in this Dementia Homecare Centre.



Figure 2 :site plan of Dementia Homecare TelukPanglimaGarang

Techniques applied for collecting primary data at both sites:

1. **OBSERVATION:** This technique was conducted basically to identify on how the surrounding environment are being used by elderly community and how they react to it.

SITE	OBSERVATION ASPECT
<p>KOMPLEKS PENYAYANG BAKTI, SUNGAI BULOH</p>	<p>1.Physical condition of outdoor space The condition of outdoor space such as garden and its availability to elderly. It is important to examine how outdoor environment and outdoor facilities could give impacts on elderly daily routine.</p> <p>2.Outdoor activities and Behavioural Also known as activity mapping, allows studying elderly activities in a specific area for a predetermined amount of time. Document in detail of stationary and motion activities such as gardening, sitting, talking, and reading, as well as</p>

	walking were conducted.
DEMENTIA HOMECARE CENTER, TELUK PANGLIMA GARANG, KLANG	<p>1.Location and condition of home care centre To identify the suitability of Dementia home care location. The location is very important as it can influence the positive environment toward those people with Alzheimer’s disease.</p> <p>2.Inventory on outdoor space and activities To determine the availability of outdoor space in home care. Outdoor space influences those Alzheimer’s disease people to do outdoor activities. It also been observed in order to investigate the potential of making use of it as therapeutic garden.</p>

Table 1: the observation technique applied at both study areas

- 2. INTERVIEW:** The technique was conducted in order to explore the views on specific matters. Also, to identify on the interaction between elderly and environment, and what are the outdoor activities suit them best.

SITE	INTERVIEW ASPECT
KOMPLEKS PENYAYANG BAKTI, SUNGAI BULOH	<p>The semi structured interviews were prepared for care taker and staff to seek in terms of:</p> <ol style="list-style-type: none"> 1. Background Study of KomplekPenyayangBaktiSg. Buloh 2. Elderly background (age, impairments, and illnesses) 3. The outdoor programmes offer to the elderly and how they react to it 4. The effects that the garden gives to the elderly <p>The unstructured interviews were prepared for elderly to seek in terms of:</p> <ol style="list-style-type: none"> 1. Their outdoor activity involvement 2. Their perspective on existing garden 3. How they use the garden 4. Type of plants do they cultivate

<p>DEMENTIA HOMECARE CENTER, TELUK PANGLIMA GARANG, KLANG</p>	<p>During the semi structured interview session with manager some elements have been highlighted which were:</p> <ol style="list-style-type: none"> 1. To know the current clinical treatment that used upon Alzheimer's disease people 2. To discover what kind of outdoors equipments and activities might help in slowing down Alzheimer's disease. 3. To identify how long those people living with Alzheimer's disease could stay outside and the impacts of it. <p>The unstructured interview session with care taker focused on follows elements:</p> <ol style="list-style-type: none"> 1. To know the activities that have been done every day in Dementia home care centre and regularity those Alzheimer's disease people being exposed to outdoor environment. 2. This question had been asked to respective caretakers in order to identify what are the activities that Alzheimer's disease people enjoy and like to do.
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Table 2: the interview technique applied at both study areas

DATA COLLECTION AND ANALYSIS

The collected data then has been tabulated and analysed into 3 main components which are:

A) SOCIAL ASPECTS

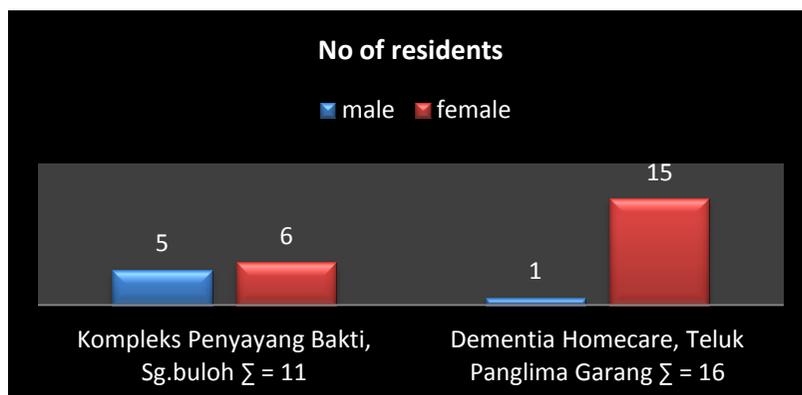


Figure 3 shows the number of residents at both sites

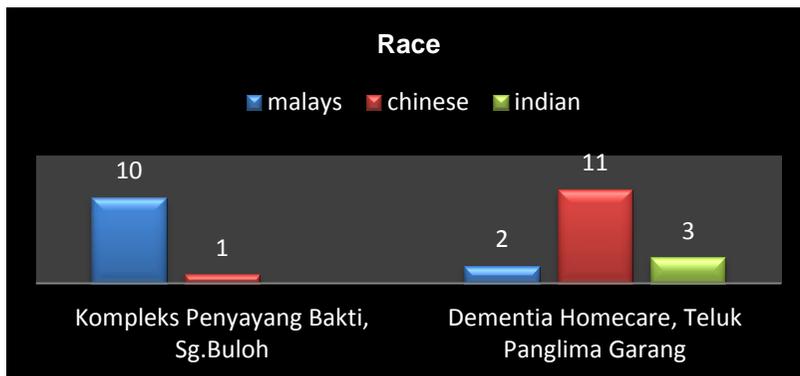


Figure 4 indicates the races of residents at both sites

Demographic Study

Both Kompleks Penyayang Bakti Sungai Buloh and Dementia Home Care Centre Teluk Panglima Garang, Klang are well-designed elderly home care centre which comprised with appropriate facilities that cater to the health and recreational needs of aged community.

Numbers of elderly residents in both community centres are controlled. The figure 3 above shows that the number of residents according to their respective home cares with the number of 11 to 16 residents per home. The idea is to ensure the patients to live comfortably in a non-crowded living environment although the area is spacious enough to allocate large numbers of patients. Large number of patients may result a noisy, crowded, or chaotic environment that can cause disturbance in the therapy process.

Assisted Living

Unlike medical centre or nursing home, both study areas Kompleks Penyayang Bakti Sungai Buloh and Dementia Home Care Centre Teluk Panglima Garang, Klang employ assisted living environment. Basically they are living on their own in a group of same ages in a residential setting. Assisted living can be defined as a type of living arrangement and environment in which personal care services such as meals, housekeeping, transportation, and assistance with activities of daily living are available as needed. During the study, it has been found that there are some elderly who are able to live out their lives in their own home without a lot of outside interference while others need 24-hour medical supervision, assistance and care depends on their impairments and disease. According to the interview conducted with the management

staff of the Community Care Centre, normally assistance is given in daily activities which include help with bathing, dressing, toileting, diapering, medicating, helping with daily living decisions and moving from one place to another. Four times a day meal also is prepared by the caretaker in-charge.

Communities are applied. Although their routines are regimented with the same daily activities prepared by the Community Care Centre, the group living concept enables the healthy elderly as well as those who are frail and weak, to living independently in the group they are familiar with. The main objective of group living in this centre is to provide an avenue for sharing between caretaker and elderly to learn about the disease and impairments as well as learn how to cope with it for the benefit of caretaker and elderly, and for them to know that they are not alone in facing their problems.

In addition, the elderly in KompleksPenyayangBakti remain in charge of their lives. They can go out visiting or shopping to nearest shop when they want. They will decide what or when to eat, and can even do their own cooking or other hobbies if they so prefer. Furthermore, activities like talking, gardening and walking between them will keep them busy and active. This type of living system of a group with the same ages encourage them to be more engage with their peers and strongly related in reducing their symptoms of depression and loneliness among themselves.

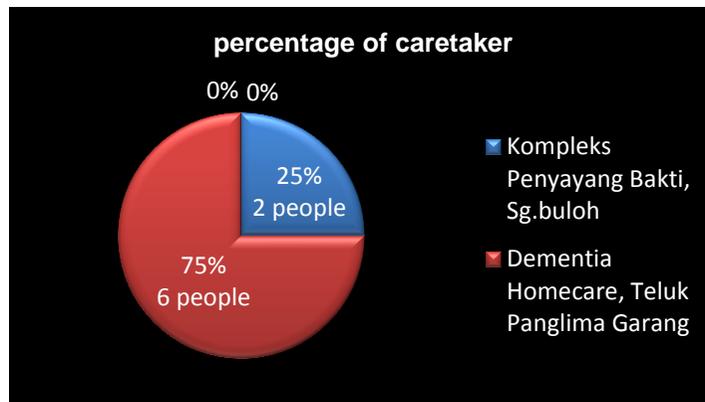


Figure 5: the pie chart shows the percentage of care taker at both sites

Outdoor activities Interaction towards environment among Elderly Daily Routine

	Time													
	7AM	8AM	9AM	10AM	11AM	12PM	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM
Dementia Home Care Centre TelukPanglimaG arang, Klang			■	■	■						■	■		
KompleksPenyayangBakti Sungai Buloh		■	■	■							■	■		

Table 3: the table shows the daily routine timetable for outdoor activities at both

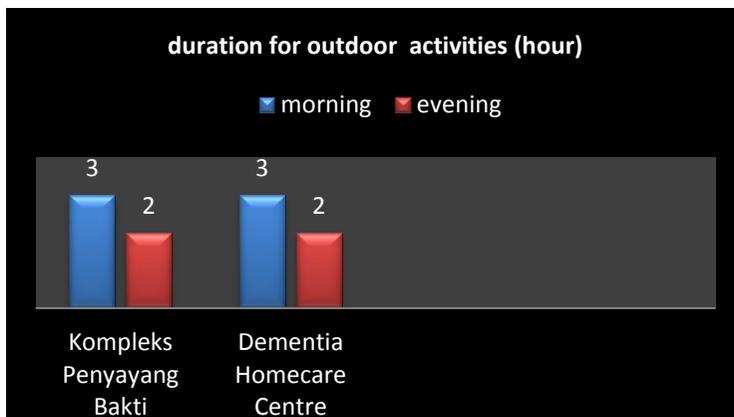


Figure 6 : the bar chart indicates the time that elderly spent outside at both sites

The **Table 3** and **Figure 6** above indicate that the time spent for outdoor activities conducted at both sites. From the chart, the time spent is generally parallel for both sites which are 3 hours in the morning and 2 hours in the evening. As elderly people are facing with some health problems at both sites, they were allowed to have outdoor activities in the morning started at 8am till 11am. This is because that the elderly people could not stay longer under the sun due to their age matter concerned. They are encouraged to stay outside, however with the certain limits of time only. In the evening, they were allowed to spend their time for two hours started at 5pm till 6 pm. The reason is why during that time the weather is not too hot and elderly can enjoy their activities like gardening, walking and so forth.

The outdoor activities conducted at both sites have been given benefits to elderly much in sustaining their health. Those activities help to

boost level of sensory stimulation, physiological aspect as well as psychological. There are the findings (refer to **Table 4**) gained through observation and interview session conducted at both sites:

Activities	Benefits	Time								
Walking	<ul style="list-style-type: none"> • Maintain mobility and independence among elderly. It also Increased muscle strength, flexibility and sense of balance, all of which reduce the risk of falls. <p>Through observation conducted, instead of physiological benefits, walking also benefits psychological aspect for elderly. The pleasant surrounding outdoor, the soothing sound of the trees and leaves moving against the wind are just several examples of the positive mental stimulus and stress relief provide by walking activity for elderly community.</p>	Morning and evening (both sites)								
Sitting Outdoor	<ul style="list-style-type: none"> • Elderly encouraged sitting out on a porch or deck for the benefits of sunshine and fresh air. It could stimulate visual level of sensory stimulation. • Sight play important role in elderly life as it impacted in both psychology and physiologically. One of the factors that are influence human sensual experience is colour. Colour can be the most noticeable elements in healing arts due to its powerful visual impact. Table 4.1 is showing the categories of colour and its effect physiologically <table border="1" data-bbox="433 1474 985 1657"> <thead> <tr> <th data-bbox="433 1474 650 1537">CATEGORIES</th> <th data-bbox="650 1474 985 1537">EFFECTS ON ELDERLY BEHAVIOURAL</th> </tr> </thead> <tbody> <tr> <td data-bbox="433 1537 650 1601">Warm colours</td> <td data-bbox="650 1537 985 1601">Cheer, happiness and fun.</td> </tr> <tr> <td data-bbox="433 1601 650 1630">Cool colours</td> <td data-bbox="650 1601 985 1630">Calm, secure and peace.</td> </tr> <tr> <td data-bbox="433 1630 650 1657">Natural colours</td> <td data-bbox="650 1630 985 1657">depress and sad</td> </tr> </tbody> </table>	CATEGORIES	EFFECTS ON ELDERLY BEHAVIOURAL	Warm colours	Cheer, happiness and fun.	Cool colours	Calm, secure and peace.	Natural colours	depress and sad	Morning and evening (both sites)
CATEGORIES	EFFECTS ON ELDERLY BEHAVIOURAL									
Warm colours	Cheer, happiness and fun.									
Cool colours	Calm, secure and peace.									
Natural colours	depress and sad									

	<p>Table 4.1 : the effects of colour towards elderly behaviour</p> <p>From the table above, it is true that based on the observation conducted at both sites, elderly feel calm secure even peace when they get involved with cool colours environment. It is also believed that colour was not the only the sign of affliction, but also might be the cure for elderly.</p>	
Gardening	<ul style="list-style-type: none"> • Promotes mental fitness : gardening can reduce anxiety and depression, which are the most common forms of mental ailments among the elderly • Makes one physically strong : It also helps in burning a good amount of calories, is a good exercise for the heart, and also helps in improving metabolism rate <p>Based on the observation conducted for both sites, with the appropriate amount of physical activity and psychological happiness, gardening can provide the health and fitness a person requires to stay fit.</p>	Morning and evening (both sites)
Aerobic Exercise	<ul style="list-style-type: none"> • Regular aerobic exercise, performed most days of the week, also helps reduce the risk of illness and premature death. Regular aerobic exercise improves health in the following ways: <ul style="list-style-type: none"> ▪ Reduces body fat and improves weight control ▪ Decreases clinical symptoms of anxiety, tension and depression ▪ Increases maximal oxygen consumption (VO2 max) ▪ Improves heart and lung function ▪ Increases blood supply to the muscles and ▪ Enhances muscles' ability to use oxygen ▪ Lowers resting heart rate <p>Based on observation finding at both sites, it is</p>	Morning (both sites)

	<p>prove that aerobic exercise do help elderly sustain their health since they enjoy and interested to do the exercise. The exercise like stationary cycling strengthens their heart and lungs which make them feel fresh and relax. As a result, it can boost cognitive processing speed, motor function and visual and auditory health in individuals aged over 50.</p>	
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Table 4:the table shows the finding gained from observation and interview conducted at both sites

B) ROLE OF PLANTS

According to the caretaker opinions, surrounding vegetation promoted the wellbeing of the elderly residents of both study area. The health-related benefits they reported were derived from the positive impact on the physical environment cause by the plants or other activities associated with plants. They stated that plants created a pleasant and peaceful homelike environment.

Through comprehensive observation and interviews conducted, it can be found that numerous types of plants species can be found in both Community Care Centres. Table 5 below are the list of the plants species and its characteristic that can be identified at both study areas.

COMMON NAME	SCIENTIFIC NAME	PLANT TYPES	CHARACTERISTIC		
			COLOURS	FRAGRANT	EDIBLE
KOMPLEKS PENYAYANG BAKTI SUNGAI BULOH					
BungaKantan	<i>Etilingeraelator</i>	Flowers	✓		✓
Jambu Air	<i>Syzygiumsamarangense</i>	Tree			✓
Kesum	<i>Polygonum minus</i>	Herbs Shrub			✓
Serai Wangi	<i>Cymbopogonnardus</i>	Herbs Shrub		✓	
Mango	<i>Mangiferaindica</i>	Tree			✓
CiliPadi	<i>Capsicum frutescens</i>	Vegetable			✓
Kunyit	<i>Curcuma domestica</i>	Herbs			✓
KacangBotol	<i>Psophocarpustetragonolobus</i>	Vegetable			✓
KacangPanjang	<i>Vignaunguiculata</i>	Vegetable			✓
Mas Cotek	<i>Ficusdeltoidea</i>	Herbs Shrub			✓
Lengkuas	<i>Alphiniagalangal</i>	Herbs Shrub			✓
Selasih	<i>Ocimumbasilicum</i>	Herbs Shrub			✓

Pandan	<i>Pandanusamaryllifolius</i>	Herbs Shrub			✓
PucukUbi (Cassava)	<i>Manihotesculenta</i>	Vegetable			✓
AsamGelugor	<i>Garciniaatroviridis</i>	Tree			✓
Belimbing	<i>Averrhoabilimbi</i>	Tree			✓
CekurManis	<i>Sauropusandrogynus</i>	Vegetable			✓
Ulam Raja	<i>Cosmos caudatus</i>	Vegetable			✓
LimauPurut	<i>Citrus hystrix</i>	Shrub	✓		✓
LimauKasturi	<i>Citrus microcarpa</i>	Shrub	✓		✓
NangkaMadu	<i>Artocarpusheterophyllus</i>	Tree			✓
PisangNipah	<i>Musa acuminatabalbisiana</i>	Tree			✓
DEMENTIA HOME CARE CENTRE TELUK PANGLIMA GARANG, KLANG					
Coconut Palm	<i>Cocosnucifera</i>	Palm Tree			✓
Kemboja	<i>Plumeriarosea</i>	Tree	✓	✓	
Parrot Flower	<i>Heliconiapsittacorum</i>	Shrubs	✓		
BungaTahiAyam	<i>Lantana camara</i>	Shrubs	✓		
Ixora	<i>Ixorajavanica</i>	Shrubs	✓		
Bougainvillea	<i>Bougainvillea spp.</i>	Shrubs	✓		
Bird Nest Fern	<i>Aspleniumnidus</i>	Shrubs	✓		
Bunga Raya	<i>Hibiscus rosa-sinensis</i>	Shrubs	✓		
Pinang	<i>Areca catechu</i>	Palm Tree			
KelatPaya	<i>Syzygiumcampanulatum</i>	Shrubs	✓		

Table 5: the table shows the list of plants and their characteristics at both study areas

Based on the study conducted, both study areas, KompleksPenyayangBakti Sungai Buloh and Dementia Home Care Centre TelukPanglimaGarang, Klangused different types of plants to produce different therapeutic impacts to the elderly which are:

1. Passive Healing
2. Active Healing

1. Dementia Home Care Centre TelukPanglimaGarang, Klang – Passive Healing

Sensory stimulation is important in the overall emotional wellbeing of people with dementia. From the inventory from the **Table 5**, it is found that the plants that have been identified in this Community Care Centre are mostly has pleasant and significant structure, scents and colours in order to stimulate their sensory. The contribution of the plants to the psychological and social well-being of the elderly resident was prominent according to interview conducted. There are strong and significant

connections between sensory stimulation with the plants interaction. They report that the colours and scents of the plants stimulated the sense of the residents and activate their memories. They state that it was not only familiar plants that residents were interested in, but also colourful flowers and unusual tree structure that drew their attention such as Kemboja (*Plumeriarosea*) and *Heliconia spp.* It can be conclude that plants physical appearance were a significant source of positive emotions for dementia patients.

2. KompleksPenyayangBakti Sungai Buloh – Active Healing

Plants contributed a social relationship as well as and gave possibilities for rewarding activities. Unlike the Dementia Home Care Centre, which the plants heal in passive ways, the landscape therapy in KompleksPenyayangBakti Sungai Buloh is more focussing on growing fruit and vegetables (refer to **Table5**). Typical native herbs and vegetables have been cultivated among the elderly residents such as Pandan (*Pandanusamaryllifolius*), CekurManis (*Sauropus androgynous*) Lengkuas (*Alphinia galangal*), LimauKasturi (*Citrus microcarpa*) and others. Mostly there are easily grown vegetables and can be used in cooking ingredients.

Based on the outdoor activity schedule for elderly prepared by the Community Care Centre, gardening activities have been performed by the residents on every Tuesday and Saturday morning Elderly usually will take about 1 hour in every session for group gardening activities. Based on the semi-structured interview, staff reported that gardening activities raised the self-esteem of the elderly by providing feelings of success and accomplishment. Actions related to plants enabled them generate their gardening skill in order to maintain their functional mobility and flexibility. Through gardening, it encourages them to use of all motor skills like walking, reaching and bending through activities such as planting seeds and taking cuttings for example. They also report that plants were a good topic of conversation, increasing social interaction between the elderly. In other words, it creates a sense of togetherness. Sometimes, the elderly praise and admire among themselves in cultivating their own plants. This can be proved that gardening is not just a healthy, stimulating physical activity that can be enjoyed by seniors, but also as communal factors among them.

C) DESIGN FEATURES

To access the design elements and its therapeutic impacts towards elderly, observational technique has been conducted. This type observational checklist is relatively simple evaluative tool which enable researcher to assess how well a particular outdoor space is functioning to

elderly. In this study, 3 main components have been extracted and taken to the consideration in order to relate how the existing design contributes towards facilitating outdoor therapy among the residents. These components that have been identified are:

1. Location and Accessibility
2. Pathway and Circulation System
3. Landmarks and Focal

Thorough study through detail observational method was employed in both study area, KompleksPenyayangBakti Sungai Buloh and Dementia Home Care Centre TelukPanglimaGarang, Klang. Observation using photograph can be considered a credible evaluation method on its design features. Below are the results of the observational technique in both study area. The design features on both sites were compared and contrast and analysed in consideration of the resident's ability and their activities.

1. Space Location and Accessibility	
KompleksPenyayangBakti Sungai Buloh	Dementia Home Care Centre TelukPanglimaGarang, Klang
 <p style="text-align: center;">Good visual accessibility towards garden</p>	 <p style="text-align: center;">Good visual accessibility towards garden</p>



Improper placement of trees and lack of landscape maintenance lead to visual defects

Strengths

- Visually, the garden can be easily viewed from indoor to encourage elderly to venture out. It can be identified that windows opened the indoor space and provided views to the outdoors and to green environment
- It is essential that the disabled individual be able to reach the garden with a minimum of difficulty.
- Both gardens are easily accessible, accommodating elderly with different ability. The efficiency of elderly mobility throughout the garden is achieved by the spaces that are easy to enter, move and exit. Location of the access door to outdoor is placed at suitable location and very apparent to enable the elderly to get outside.
- Strong defined space by boundary of surrounding hedges and fences can be identified in order to create sense of privacy to the garden. It will create the elderly their own privacy sphere to perform their own activities alone.
- Opportunities for social engagement enhances by careful design planning and the arrangement of spaces.
- There is good visibility around the garden from every spot in the garden which could assist the caretaker and nurses to monitor the patients from range.

Weaknesses

- Due to lack of landscape maintenances and improper care, causing the trees grows inappropriately and leads to poor

- visual appearance to the garden.
- Different size growth of the trees and improper placement of trees with inappropriate hierarchy causing certain good views were blocked.

2. Pathway and Circulation System	
<p>Kompleks Penyayang Bakti Sungai Buloh</p>  <p>Shaded walkway provided to minimize glare exposure towards elderly</p>  <p>Easy circulation with well-shaded walkway from existing trees</p>	<p>Dementia Home Care Centre TelukPanglimaGarang, Klang</p>   <p>Simple and wide walkway is essential to ensure minimizing confusion for elderly</p>
<p>Strengths</p> <ul style="list-style-type: none"> Most elderly especially the dementia patients often engage in 	

'wandering' behaviour so the walkway system is essential.

- The layout of garden is easy to understand and not complicated to minimize confusion for elderly who are not functioning well cognitively especially the dementia patients
- Presents of deciduous trees and shaded-walkway promote and encourage walking activities among elderly and help to reduce glare and Ultra Violet Radiation exposure towards them.
- Provision of level pathway system of building and garden as elderly may exhibit lack of coordination and balance
- Consistent and suitable pathway colour with less glare as the elderly age, their eyes are less able to cope with the glare caused by light bouncing off light-coloured material.
- Paving materials design are secured with sufficient texture to insure a firm feel underfoot and minimize slipping
- Raised edge to border between pathway and gardening region help to defined two different spaces to avoid confusion.

Weaknesses

- The garden circulation was identified not designed in simple looped. Unsuitable path with dead ends can be found which lead difficulties in elderly movement causing them easily disoriented and agitated. Elderly may find difficulties in finding their way in the garden.
- Unstable walkway may lead to difficulties for walking
- There are certain area with improper dimension for walkway which lead to bottleneck
- Not provided Handrails along the walkway which is very essential for those with balance problem

3. Landmarks, Focal and Furniture	
<p>Kompleks Penyayang Bakti Sungai Buloh</p>  <p>Existing seating not in suitable location and inappropriate dimension for elderly</p>  <p>Improper social seating area with inappropriate view</p>	<p>Dementia Home Care Centre Teluk Panglima Garang, Klang</p>  <p>Water features is essential in providing tranquility and calmness towards the Dementia patients</p>
<p>Strengths</p> <ul style="list-style-type: none"> • Water fountain can be found at Dementia Home Care Centre. The purpose of the landmark existed is to encourage the dementia patients to walk as visible and memorable destination points is important as they are more easily react to unfamiliar and interactive structure. • Additionally, water fountain is essential to give sense of calm and tranquillity to the elderly which have positive therapeutic impacts towards them. <p>Weaknesses</p> <ul style="list-style-type: none"> • Lack numbers of seating was identified causing less opportunity for elderly to sit and rest and less likely they will get out and walk. • Poor rate of the seating sturdiness, beauty, and the height of seats, which relates to ease of seating can be identified. • Existing seating size and design is inappropriate and unsafe for frail elderly. Poorly balanced or poorly constructed seating is 	

unsafe causing uncomfortableness among elderly for sitting and difficult to get up and out of the bench safely. Chairs should have sturdy arms, which can be used to help a person rise and the chair width large enough to accommodate someone of generous proportions.

- Most of the seating located at unsuitable place and with less appropriate views may relate to the less socialization between elderly. This is because placement of the seating is important in enhancing opportunities for social engagement among the elderly. Other than that, benches are not wide enough for two and more individuals to sit comfortably together for conversation.
- Lack of focal point or landmarks at KompleksPenyayangBakti as it is essential as way-finding elements among elderly living with dementia.

RECOMMENDATION

1. Passive space

This space promotes calm restfulness where residents can enjoy serenity, peace, a sense of freedom and a chance to get alone. One kind of passive space is sitting-out space where a comfortable seat or seating area is required for resident to go to and use it. This space passively gives stimulation to user through natural world. The green colour gives calm effect meanwhile blue and white blossoms influence restful effect to the space.

Qualities:

- comfortable furniture to encourage resting surrounded by sensory nature
- peaceful and pleasant views to help a person cool and relax
- a glimpse of wildlife encouraged by the nearness of a tree, bird bath or bird feeder
- enclosure or shelter- a structure with seating and a roof and a view out

2. Active space

This space promotes movement and activity that could encourage an active lifestyle for elderly people. This active space basically involved with physical activities and people can be actively engaged to outdoors in many ways at this space. This space also offers calmness, enjoyment and

relaxing. In order to create active space, people should enable to do these sorts of activities through design:

- feeding, exercising, petting for animals
- exercise, sports or green gym- for aerobic exercise, balance and strength
- Gardening work or a purpose-built polytunnel for doing garden projects, planting up, woodwork or tinkering with tools.

3. Risk free gardens

This area is outdoor space where elderly could use it independently without supervision from staff and caretaker. This space is made for elderly who are physically able. This area need to be visible from indoor rooms so that the caretaker or staff can see those people who are using them. One type of risk free garden is a balcony area where elderly can able access to it as they want.

- No sharp turns in path
- Furniture is largely fixed and static
- No plants with thorn or prickles
- Allows for visibility from inside windows of the home

4. Risk-assumed gardens

This is an outdoor area that only be used by elderly when they are accompanied by a responsible person. This area also known as “family garden” because it will be frequented by families and all ages play equipment included.

Criteria:

- Shed
- Water feature
- Planters
- Pergola, trellis

CONCLUSION

Outdoor activity is an indispensable domain of life. It implies time to relax and play and also engaging in desired activities without any obligation or duty. The activity done frequently associated with enjoyment and is independent of work and activities of daily living.

The purpose of this paper is to study the pivotal role of outdoor environment in cultivating elderly wellbeing. Several components have been taken into considerations such as Social Aspects, Plants and Surround Design that have strong association in manifesting this study. Through the findings gained in this study, it is proven that an outdoor environment does have impacts towards elderly well being. These include a positive impact on the cognitive function, survival and longevity, quality of life and life satisfaction.

Therefore, the outdoor environment should be designed well so that it truly become therapeutic and could improve quality of life as well.

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