The Significant Impact of Home Pocket Garden on the Quality of Life During the Pandemic Era

Aliyah Nur Zafirah Sanusi1, Fadzidah Abdullah2, Rosniza Othman3, Aida Kesuma Azmin4, Zeenat Begam Yusof5, Nayeem Asif6

1,2,4,5,6Department of Architecture, Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia, Malaysia, 1Faculty of Engineering, Prince Mugrin bin Abdulaziz University, Saudi Arabia

Email of all Authors: aliyah@iium.edu.my, fadzidah@iium.edu.my, r.othman@upm.edu.sa, aida_kesuma@iium.edu.my, zeensoni@iium.edu.my, nayeem@iium.edu.my
Tel of 1st Author: +6019 380 0991

Abstract
Before the pandemic, residents in the Klang Valley tend to prioritize indoor living space to outdoor. This study analyzed the importance of outdoor green space in residential buildings. It consists of two objectives; to identify the type of home pocket gardens used and to evaluate the significant impact of home pocket gardens on the quality of life (QOL) during the pandemic. A survey was conducted using a five-point Likert scale and distributed to three housing communities within the Klang Valley. In conclusion, home pocket gardens provide a positive impact on the QOL during the pandemic.

Keywords: Pocket Garden, Quality of Life.

1.0 Introduction
The current Covid-19 health crisis is not only affecting physical well-being but also psychological. The enforcement of movement control order (MCO) has affected the daily routine in all households across the globe. Most of the daily activities take place at home, which includes online schools and working from home. The only escape space is the outdoor open space within their house compound.

The Laws of Malaysia Uniform Building By-Law, Clause 32(1)(a) stated the necessity of providing open space in residential buildings. It stated that the outdoor open space should not be less than one-third of the built-on area of the building (UBBL, 2006, 14th edition). Despite the law, before the pandemic, a study in the Klang Valley found that the residents were not satisfied with the original house design because it did not fulfill their needs and satisfaction indoors. This results in the extension of the built-up area and loss of outdoor open space (Omar et al., 2012). However, the MCO has influenced the living conditions preference and the needs of outdoor open space. A survey was conducted on 8177 university students in Italy after two months of movement control order (MCO) implementation. The findings show a strong relationship between poor housing, poor views, and lack of green areas, with the increasing risk of developing depression symptoms during the MCO (Amerio et al., 2020).

This study analyzed the significance of outdoor green space in residential buildings in Malaysia. It consists of two objectives; The first objective is to identify the type of home pocket gardens used in homes. The second objective is to evaluate the significant impact.
of home pocket gardens on the quality of life (QOL) during the pandemic. Before the pandemic, the "a city in a park" concept was proposed by the former Prime Minister of Malaysia, Tun Dr. Mahathir Mohamad. In response to the concept, the Federal Department of Town and Country Planning, Peninsular Malaysia (FDTCP) issued Planning Standard Guidelines for Open Spaces and Recreation (JBPD 7/2000). The purpose of the guideline is to assist local authorities (LAs) in implementing green open spaces in their town planning and building projects (Ibrahim et al., 2013). This study also responded to the United Nation's Sustainable Development Goals; no hunger (SDG 2), good health (SDG 3), sustainable cities and communities (SDG 11) (Williams and Blaiklock, 2015).

2.0 Literature Review

Many researchers have carried out studies on Quality of Life in the past. There are also research findings on the psychological impact of green open space. The following are literature reviews literature that is relevant to this study.

2.1 The Essence of Quality of Life

Quality of Life (QOL) is a concept defined as “the degree to which the experience of an individual’s life satisfies that individual’s wants and needs in both physical and psychological” (Rice, 1984). Vischer (1989) came up with a pyramid of three types of comfort; physical, functional, and psychological comfort (Fig. 1). Physical comfort is the comfort sensation feeling a human body. When the occupants have adequate space to function well, they will achieve Functional Comfort. The occupants will achieve Psychological Comfort when satisfied with their living environment and well-being (Vischer, 2015).

There are various indicators used in measuring Quality of Life. In Sweden, there were three indicators used in measuring Quality of Life. They are Having, Loving, and Being. Having is related to personal needs and materials, Loving is related to social relationships with other people, and Being relates to participation, personal growth, and relation towards nature (Allardt, 1993). The QOL indicators in a developed country include materials, social relationships, and activities with context and natural elements (Allardt, 1993).

A study was carried out in Amman, Jordan on the domains that affect the Quality of Life (QOL) in the city of Amman. Amman is similar to Kuala Lumpur where both are developing countries. It was concluded 11 domains affect the QOL. Environment, health, housing, and economy are the domains that have more effects. (Fig. 2). The study also concluded that satisfaction with one’s housing and living conditions is one of the indicators towards QOL (Ali et al., 2009).

In the local context, a study in two housing estates in Johor concluded that four principles influence the residents’ level of well-being, one of them is appropriate landscaping (Ismail and Muslim, 2017).

Fig. 1: The pyramid of three types of comfort towards Quality of Life.
(Source: Vischer, 1989)

Fig. 2: Percentage of the domains affecting QOL in Amman, Jordan.
(Source: Ali et al., 2009)
2.2 The Impact of Home Pocket Garden
A study in Taman Melati Mastika (TMM), Kuala Lumpur concluded that residents facing green areas are the most satisfied with their living conditions as compared to the other houses that face away from the green areas (Bakar et al., 2016). In Taman Aman, Petaling Jaya, a neighborhood park reduces the stress of the residents. Among many elements in the park, the residents find nature helps them achieve psychological comfort (Hussein, 2021).

In Barcelona, Spain, gardening activities were proposed for mental health disorders residents on urban rooftop gardens where gardening benefits their mental well-being. It concludes that gardening is associated with personal development and emotional well-being. The gardening activities provide social inclusion and a sense of purpose. Hence, which gives a positive impact on their QOL (Triguero-Mas et al., 2020). Urban dwellers in Sri Lanka have found that home gardening fulfills at least one or two daily nutrition from their vegetable products. The garden activities act as a stress release, healthy family interaction, and social unity during the Covid-19 pandemic (Dissanayake and Dilini, 2020).

Greeneries also can improve the air quality for a better Environmental Quality (EQ) (Farid et al., 2016). This provides good health and well-being which is part of QOL. Another survey in Oman supported this. It was found that the residents were motivated to do gardening for various reasons. The most dominant motivation was aesthetic, followed by natural shading, past-time activities, and food source (Al-Mayahi et al., 2019).

3.0 Methodology
The study formulates the methodology according to the two objectives. Fig. 3 shows the research methodology flow chart.

3.1 Research Area
Three housing areas were selected for this study; Taman Mutiara Gombak 1, Gombak, Selangor; Taman Bukit Utama, Ampang, Selangor; and Taman Bukit Bandaraya, Bangsar, Kuala Lumpur. The housing typologies are linked-terraced house, bungalow, and semi-detached bungalow, which are all landed, that allow owners to have a home pocket garden. There are a diversity of ages, races, and occupations in the community. Hence, this study excludes apartments, condos, and other high-rise housing typologies.

3.2 Sample and Questionnaire
The primary method of this study is the questionnaire survey. The survey questionnaires were formulated based on three variables. They are food and nutrition security; social and sustainable living; and finally, health, and well-being (Mayahi et al. 2019). The survey questionnaire was administered through official online housing social media, such as Whatsapp groups and personal messages. The questionnaire contains Part A: Respondents’ Background, Part B: Home Pocket Garden Description, and Part C: Perception Towards Home Pocket Gardens. The questionnaire used a five-point Likert scale of 1: Strongly agree, 2: Agree, 3 Neutral, 4 Disagree, 5 Strongly disagree. It was distributed to 292 housing online community population, namely 124 residents from Taman Bukit Bandaraya, 96 from Taman Bukit Utama and 72 from Taman Mutiara Gombak 1. The survey was limited to only one representative per household. A total of 30 residents had responded to the survey. The response rate of the survey is 10.3% of the total population. This result is sufficient for further analysis (Krejcie & Morgan, 1970).

This study uses the democratic (participatory) approach, which is also called a community or bottom-up approach (Wegener and Huner, 2001). The democratic approach gains information from local ordinary citizens. The purpose was to understand what is needed by the community.

4.0 Findings

4.1 Demography of the Respondents
As mentioned earlier, 30 out of 292 housing online community population responded to the survey. Among the 30 respondents, there were 25 females and five males. The respondents were mainly from the middle-aged group. 40% of the respondents are between 41 to
50 years old, while 34% of respondents are between 51 to 60 years old. 20% are above 61 years old. 53% of the respondents live in a terraced house. 34% live in semi-D, end lot, and corner lot and only 13% live in a bungalow. The majority of the houses have between 4 to 6 occupants. Fig. 4 presents data on the household income. The majority of the respondents fall under the middle range and have high household incomes (Fig. 4).

![Bar chart showing household income ranges](image1)

Fig. 4: The household income of the respondents.

Fig. 5 presents the data on professions. The majority of the respondents are either self-employed, work, or own a private company or housewives (Fig. 5).

![Bar chart showing professions](image2)

Fig. 5: Professions of the respondents.

### 4.2 Type of Home Pocket Garden and Gardening Activities

63% of the respondents have a home pocket garden before and during the Covid-19 pandemic. Fig. 6(a) and (b) show the same percentage of residents that have a home pocket garden before and during the pandemic.

![Pie charts showing home pocket garden status](image3)

(a) Did you have home pocket garden before Covid-19 Pandemic?
(b) Do you have home pocket garden during Covid-19 Pandemic?

Fig. 6 (a) Residents with home pocket garden before pandemic; (b) Residents with home pocket garden during the Covid-19 pandemic.

However, there are differences in respondents. Four respondents had a home pocket garden before the pandemic but did not continue during the pandemic. Similarly, four respondents did not have any home pocket garden during the pandemic but started to have one. Nine respondents, who do not have any home pocket garden expressed their intention to have a home pocket garden after
the pandemic. Two respondents who do not have a home pocket garden during the pandemic do not plan to have one afterward (Fig. 7). One of them works in a private company and lives in a bungalow at Taman Bukit Bandaraya and the other one is a self-employed living in a terrace/linked house at Taman Bukit Utama. Both of their income is within the high range, between RM15,001 to RM18,000 per month. On average, both of them have limited land open space for gardening, between 1m² to 3m².

Do you wish to have or plan to continue having home pocket garden after the Covid-19 Pandemic?

Fig. 7: Respondents’ interests in having or continuing to have home pocket garden after the Covid-19 pandemic.

Fig. 8 shows that the majority location of the home pocket garden is in the front yards. Fig. 9 shows that 34% of the respondents have a small home pocket garden, between 1m² to 3m² area.

Fig. 8: Location of home pocket garden.

Fig. 9: The variety sizes of home pocket garden.

37% of the respondents do garden activities once a week. There are many types of home pocket gardens found in the three housing communities. 73% of the respondents have potted plants, 60% have container and planter box gardens. 20% of the respondents have rooftop gardens (Fig. 10).
Fig. 10: Various types of home pocket garden.

Fig. 11 (a) shows an example of potted plants in a terraced house in Taman Bukit Bandaraya. Fig. 11 (b) shows an example of big fruit tree planting in a house in Taman Bukit Utama. The homeowner grows papaya trees. Fig. 11 (c) and (d) show examples of hydrophonic pocket gardens in Taman Mutiara Gombak 1. The house owner grows vegetables and herbs in her hydroponic home pocket garden.

(a)

(b)

(c)

(d)

Fig. 11 (a) Potted plant in Taman Bukit Bandaraya; (b) Papaya tree in Taman Bukit Utama; (c) & (d) Hydrophonic home pocket garden in Taman Mutiara Gombak 1. (Source: Pictures taken by residents of Taman Bukit Bandaraya, Taman Bukit Utama and Taman Mutiara Gombak 1, 2021)
Fig. 12 shows an example of a combination of a home pocket garden and an outdoor family area in a house in Taman Bukit Utama. Both garden and family areas were connected to allow interaction among all family members of different age groups and hobbies. It shows a spatial relationship between the home pocket garden and the outdoor family seating area.

Fig. 12: An example of spatial relationship between home pocket garden and outdoor family seating area.
(Source: Pictures taken by a resident of Taman Bukit Utama, 2021)

4.3 Satisfaction on Home Pocket Garden
Overall, the majority of the respondents were moderately, very, and extremely satisfied with their home pocket garden and the size of their home pocket garden. Fig. 13 (a) and (b) show the percentage of their satisfaction. A total of 80% are moderately, very, or extremely satisfied with their home pocket gardens. Meanwhile, a total of 70% are either moderately, very, and extremely satisfied with the size of their home pocket gardens. A few respondents were happy with their home pocket garden even though they were not satisfied with the size.

Respondents who were not satisfied with the size of the home pocket garden have minimal land size, between 1m$^2$ to 3m$^2$, available for gardening. Among the 3 respondents who were extremely satisfied, 2 of the respondents have more than 15m$^2$ area of the home pocket garden and 1 of the respondents has between 3m$^2$ to 6m$^2$ area of the home pocket garden.

4.4 Perceptions Towards the Significant Impact of Home Pocket Garden (HPG) on QOL during the Covid-19 Pandemic
The survey of residents' perceptions towards the significant impact of the home pocket garden on QOL during the Covid-19 pandemic was also carried out. Most of the respondents have agreed that HPG can enhance food security (SDG 2) for the family during the pandemic, with a mean value of 3.7 (Fig. 14). However, HPG does not have a significant impact on their household economic growth (SDG 8). It has a mean value of 2.7 (Fig. 15).
Fig. 14: The impact of home pocket garden to food security (SDG 2)

Fig. 15: The insignificant impact of home pocket garden to their economic growth (SDG 8)

Four of the survey questionnaires were related to the impact of HPG on sustainable cities and communities (SDG 11).

Does HPG promote sustainable lifestyle?

Does HPG encourage social interaction among neighbours?

(b) Does HPG improve social sustainable relationship among neighbours?

Fig. 16 (a), (b), (c) and (d): Perceptions on the impact of HPG on the sustainable cities and communities (SDG 11).

The findings in Fig. 16 (a), (b), (c) and (d) show that HPG gives a significantly positive impact to the sustainable and communities (SDG 11), with a mean value of 3.7 as compared to SDG 2 and SDG 8. It indicates that the majority of the respondents believe that HPG has a good positive impact on enhancing the quality of life for oneself as well as the neighboring community. Another four of the survey questionnaires were related to the impact of HPG on good health (SDG 3).
The most significant impact of HPG is on good health and well-being (SDG 3), with a mean value of 3.8. Fig. 18 shows the respondents’ positive attitude by almost unanimously agreeing to encourage their neighbours to get involved in HPG, with the mean value of 4.2. It indicates their satisfaction with having HPG.

5.0 Discussion

The findings have shown a significant positive impact of Home Pocket Garden (HPG) on the quality of life (QOL) of many houses that have a home pocket garden and implement gardening activities as part of their daily routine. The respondents were not convinced that HPG can be a source of generating income for the household (SDG 8). However, most of the respondents agreed (mean value 4.2) to encourage the neighbours to have HPG in their homes, which demonstrated their satisfaction.

The findings show that HPG gives a significant positive impact on their health and well-being (mean value 3.8. From the literature review, having good health and well-being is part of achieving QOL. Most respondents also find the HPG provides them food security which is also part of achieving QOL. Furthermore, most respondents find the HPG provides a sustainable lifestyle and healthy social relationships among family members and neighbours, which are also part of achieving QOL. This relates to the essence of QOL stated in the literature review.
6.0 Conclusions & Recommendations

6.1 Conclusions

In conclusion, the housing community has ventured into various types of HPG. There were 12 different types of home pocket gardens (HPG). Some respondents utilized hydroponics and rooftop gardens within the limited open space area.

The second objective was to evaluate the significant impact of home pocket gardens on the quality of life (QOL) during the pandemic. This study concluded that HPG gives a significantly positive impact on the QOL during the pandemic in achieving food security (SDG 2), good health and well-being (SDG 3), and sustainable lifestyle and communities (SDG 11). Having the HPG during the pandemic gives a significant positive impact on the QOL in terms of food security, good health, and well-being, and healthy social relationships.

6.2 Recommendations

Further studies should take place in the development of HPG. There should be architectural intervention in providing HPG friendly housing design & planning. This study also recommends HPG be developed into a community vegetable garden to foster better relationships among the community. Collaboration and transfer of knowledge on HPG among neighbours should also be encouraged. Knowing what the neighbours grow, the techniques, and technology will help the sustainability of the gardens. The knowledge transfer enables them to obtain information on the latest technologies and adopt new skills.

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Paper Contribution to Related Field of Study

The results highlight the importance of open green space areas for the well-being of residents in the current pandemic situation. The findings will strengthen the need for local authorities to implement such policy in line with Planning Standard Guidelines for Open Spaces and Recreation (JBPD 7/2000) issued by FDTCP.

References


