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HOUSEHOLD GARDENING AS PREFERENCE ACTIVITIES TO SUPPORT COMMUNITY RESILIENCE DURING PANDEMIC COVID-19

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ABSTRAK

The COVID-19 pandemic in 2020 affected countries across the world and sudden disruptions to everyday life and impact well-being. The implementation of exceptional procedures of social distancing includes working places and schools' closures urged people to stay at home to reduce the number of close physical interactions and decrease the spreading of pandemic. With the long hours of family members staying at home, people prefer to do some activities at home. Doing gardening is seen as one of the preferences of urban inhabitants. However, few studies have measured the preference of urban gardening, particularly during household gardening in Jabodetabek, Indonesia. This paper examines people preferences on household gardening during the pandemic of Covid-19, comparing it with their activities before and predict it with possibility after the pandemic. We explore how type of gardening varies between vegetable or ornamental plants, community or household garden type, and the persons involved during gardening. Using google form, 148 respondents in Jabodetabek were answering between July-Dec 2020. Our study examines the emotional well-being (EWB) using Qualitative Content Analysis (QCA), applying codes and categories. Gardening as one of the favorable activities considered to generate happy time with family and they would like to continue the activities after the pandemic. However, landscape architect was not yet chosen as the gardener when they need professional assistance. This might rise a future research about the role of landscape architect in gardening movement in urban community gardening.

Keywords: *covid-19 pandemic; household and community gardening; landscape architects' role; preference activities*

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INTRODUCTION

The 2020 pandemic of Covid-19 spread to countries across the world and evoked sudden disruptions to human everyday life which impacted well-being, particularly among densely populated urban with limited public space. To avoid the spread of virus, world-wide government have arranged social distancing that ranges from isolation among people in entire metropolitan areas and commanding inhabitants to stay home and closing down of meeting places and schools, and voluntary isolation of the elders. People living in cities around the world learnt to accept pandemic crises as a new reality and finding ways to maintain their well-being during the lockdown time and the practice of physical distancing regulation, because this practice can be effective against disease transmission (Gu et al., 2020; Tian et al., 2020; Wilder-Smith & Freedman, 2020).

The 2020 novel coronavirus pandemic has caused countries across the world to implement unprecedented measures of social distancing to curb spreading of COVID-19. Such measures include school closures and urging people to stay home, and centre around reducing the number of close physical interactions among people. It is widely regarded as one of the most effective approaches to keep COVID-19 cases down (Gu, Jiang, Zhao, & Zheng, 2020; Tian et al., 2020; Wilder-Smith & Freedman, 2020). However, this condition often results in social isolation for many people and induce feelings of loneliness, with negative well-being consequences (Hawkley & Cacioppo, 2010).

Gardens are part of the concept of urban green infrastructure and “nature in the city”, which includes trees, parks, and urban farms. Several studies have evaluated the broader role that nature in the city plays in enhancing human health and well-being. Some studies have focused on the health benefits of green infrastructure. However, many people live without access to a private garden or public parks and greens spaces (Wolch et al., 2014), placing a higher lockdown burden on underprivileged communities. This paper discusses the way people adapted to do household or community gardening to benefit the urban nature that they could access during the pandemic to see if urban gardening could be one of the solution factors that enhance the people’s happiness, to maintain the community gathering and social mental health, the environmental solution for the social and ecosystem problem. This paper examines to measure the preference or perception of individuals while engaging in gardening activities and compare it in the context of human-infrastructure interactions before and during the

pandemic activities. Specifically, we study household gardening, which has been relatively under-studied, comparing it to community activities as well as different types of gardening within the category of household gardening (that is vegetable versus ornamental gardening), and in different urban settings (household or community gardening).

A threat that might follow in the pandemics are cuts in food supply chains. Such potential disturbance creates a need for greater local food production capacities inside metropolitan landscapes (Barthel et al., 2019) and diversification through edible urban commons needed to improve access to food. An edible urban common is a unit of an edible green infrastructure (Russo & Cirella, 2019) which includes any common space, natural or modified, within city and peri-urban limits, that contains naturally growing edible plants. Vegetable garden as part of edible urban common projects is emerging worldwide and home gardens is rise in popularity to provide fresh food (Sofo & Sofo, 2020). There is an urgent need of applying social-ecological resilience thinking to urban food systems to feed everybody equitably, offer livings, and prevent environmental poverty (Hodbod & Eakin, 2015). Community gardens in the United States have been widely recognized as an effective grassroots response to urban disinvestment and decay and have been used to promote economic development in many cities (Colding & Barthel, 2013). Such responses to crisis are possible because there is open land for nature in the city that people have access to (Barthel, Parker, & Ernstson, 2015).

Despite seemingly divergent ideologies, previously Havana and now also Singapore (Tan, 2020) are examples of cities that have prepared for cuts in supply lines. This illustrates how resilience building practices drawing on nature-based solutions become critical to nurture and keep alive in collective memory during times of economic expansion and social prosperity (Colding & Barthel, 2013; Kabisch et al., 2017; McPhearson, Andersson, Elmqvist, & Frantzeskaki, 2015). This includes carefully considering how the pandemic impacts local communities across the Global North and Global South as well as different urban densities, from the capacity for disaster response to social security infrastructures and down to the feasibility of physical distancing measures. Examples include community gardens jointly cared for edible verge gardens or public fruit trees found even in market economy dominated cities where communally held land is sparse, but also public spaces owned and maintained by the local community (Bingham-Hall, 2016). These spaces can be “co-owned and/or co-governed by its users and/or communities according to their own rules and norms” (Scharf et al., 2019) or

freely accessible to passersby (Colinas et al., 2019). As recent data indicates, access to nature seems to be even more important during the current situation of social distancing than previously before (Google 2020a). This is due to that urban nature provides a refuge and escape from household confinement. Absence of stressors of physical confinement combined with positively contributing factors of natural environments likely help to momentarily reduce stress and provide relaxation (Hartig et al., 2014; Tyrväinen et al., 2014). The benefits of nature interaction as doses of stress reduction are nowadays well-established in the literature (Barton & Pretty, 2010; Cox et al., 2017). Hence, access to urban nature is especially important when pressure levels are high in populations that suddenly are asked to stay in place and that experience concern due to uncertainty and fear of infection (Brooks et al., 2020). In this paper, we argue that during these extraordinary circumstances, urban nature offers resilience for maintaining well-being in urban populations, while enabling social distancing. The idea of this scheme is that in circumstances of intentional social distancing, in which people are still allowed to visit outdoor environments, urban nature can afford people with breaks to escape household quarantine and enjoy a host of positive well-being effects (Hartig, Mitchell, de Vries, & Frumkin, 2014; Markevych et al., 2017),

During these extraordinary circumstances of social distancing, urban nature offers resilience for maintaining well-being. The gist of this proposition is that in circumstances of voluntary social distancing, in which people are still allowed to visit outdoor environments, urban nature can provide people with opportunities to escape household confinement and enjoy a host of positive well-being effects (Hartig, Mitchell, de Vries, & Frumkin, 2014; Markevych et al., 2017). Whether cities can simultaneously promote nature contact and social distancing is a matter of how they are spatially organized. Spatially contained development is advocated to decrease urban metabolism and mitigate climate change (Güneralp et al., 2017; Kennedy et al., 2015; Pan et al., 2019). However, plenty of space in cities needs also be allocated to nature for the sake of residents' well-being (Giusti & Samuelsson, 2020; Hartig & Kahn, 2016). The Covid-19 pandemic requires unchartered ground for many research fields. The response of vast social distancing generates natural experiments around human and environment connections that has never happened in the past. This unique situation especially puts light on an urgently needed knowledge frontier drawing on resilience city science. Early signals show that in Sweden, where soft measures applied around requests to social distancing have been implemented rather than strict rules, people have turned to urban

nature (Google, 2020a). Maintaining or increasing space for nature in cities and keeping it accessible to the public should be part of the sustainability agenda, aiming simultaneously to strive towards SDG 3 (good health and well-being), and SDG 11 (sustainable and resilient cities). As cities seek to become more livable and environment-friendly, activities like bicycling, walking, and urban gardening (household and community-gardening) are receiving much attention. However, few field studies have measured well-being of urban gardening, particularly during household gardening in Indonesia. Our study examines the emotional well-being (EWB) reported during household gardening, comparing it with other leisure and day-to-day activities. to enhance the importance of landscape gardening profession and activities that is relevant and useful for urban style living that is embracing nature and resilience. Specifically, this study has three research objectives: (1) understanding human engagement (time spent per week and frequency) with gardening, in the context of time spent in daily activities, (2) measuring people happiness during household gardening and compare with other activities, and (3) focusing only on household gardening, exploring how the EWB of participants engaged in gardening varies across gardener type, and companionship during the gardening activity. While the pilot project reported here focuses on household gardening, future work seeks to compare the emotional wellbeing of household gardening with community gardening to offer future policy insight on the well-being benefits of urban gardening as a public or private good. It will be crucial to understand not just the magnitude of the effect of social distancing, but also how it changes people's activity spaces, how socio-economic factors impact on such changes. Moreover, urban nature supports human interactions not only with other people, but also with the natural world and social relationships are maintained even with due to social distancing. Spending time with others in nature can build social capital and improve social cohesion (Jennings & Bamkole, 2019), critically needed during psychologically hardships. Contact with nature can also provide urban residents with a sense of companionship (Weimann et al., 2019).

RESEARCH METHODS

Time and Location

The data for this study comes from a class of students who enrolled in the subject on Landscape planning and Design at the Department of Architecture, Gunadarma University. The research questionnaires using the application of Google forms were distributed to the

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academics and students who live all over Jabodetabek over a period of six months, from June, 2020 to December 2020. This paper reports respondents' activity associated with gardening in the context of human-nature interactions. Research location was carried out by the authors in the Kelurahan Pamulang Timur, Kecamatan Pamulang, Kota Tangerang Selatan Province Banten (Figure 1) but the research questionnaires distributed through online to the students who live all over Jabodetabek (Jakarta-Bogor-Depok-Tangerang and Bekasi).

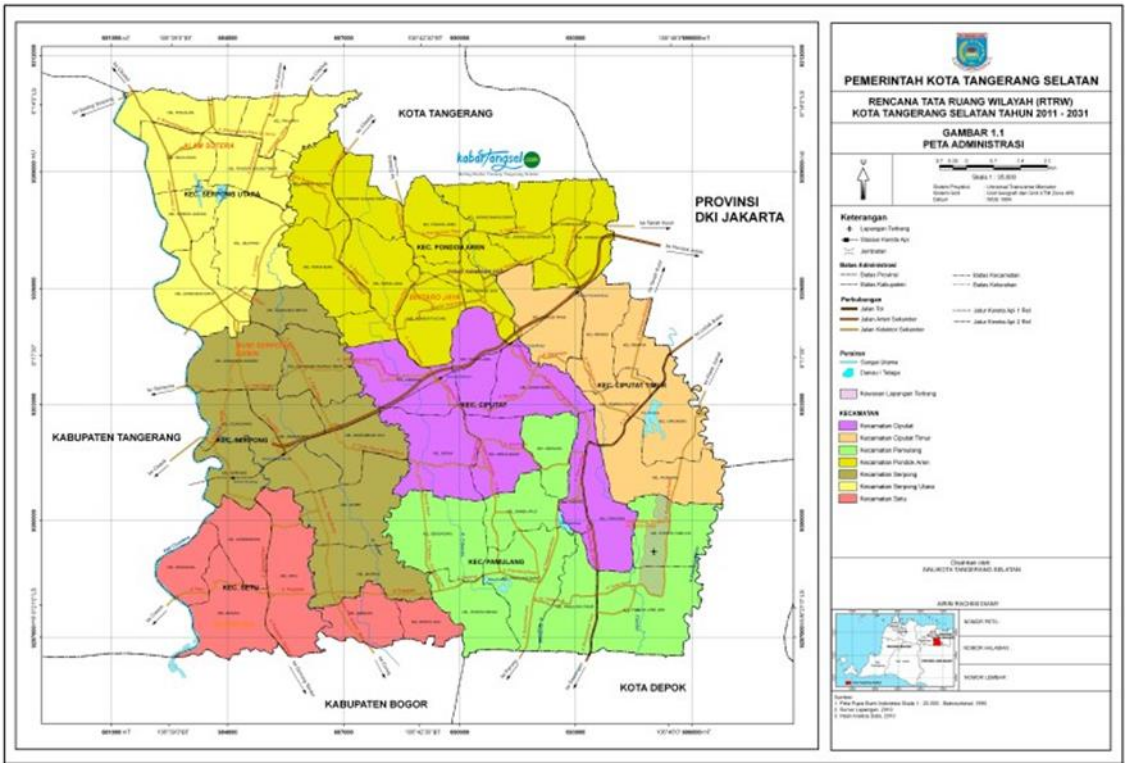

Figure 1. Map of the research location
Source: https://kabartangsel.com/direktori-tangsel/peta-kota-tangerang-selatan, 2021

Data Collection

Data collection is carried out through online and google forms were distributed to students who were joining the class on Landscape Planning and Design at the Department of Architecture Universitas Gunadarma; the study uses the following methods that is online Questionnaires Documentation and Interviews. The data source used consists of primer data, namely data obtained by researchers directly from online survey results and on phone interviews with some of the respondents. Secondary data is obtained from journal literatures, documentation/photos, and government reports.

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The Data Analysis Method

This research used Thematic analysis, which is often called Qualitative Content Analysis (QCA), which is one of the most used methods for analyzing qualitative data. This paper used this systematic method of qualitative data analysis, focuses on its key characteristics, and depicts a typical workflow. The aim is to give special consideration of the development of groupings, since those categories are the core of the method. Working with codes and categories is a proven method in qualitative research.

RESULTS AND DISCUSSION

Our results highlight several points as follows.

• Household gardening is associated with happiness and leisure time with the family.

• Vegetable gardening is associated with more preference than ornamental gardening.

• Gardening at household is involved various family members while in community gardening involved more professional persons.

Gardening as a recreation or refreshing leisure time during the pandemic.

The reasons of the respondents to do gardening at home are revealed in the following diagram. Most of the respondents (54.9%) preferred gardening as a recreation or refreshing leisure time during the pandemic that urge them to study or work from home. The second group (37.3%) revealed that they just need to kill the time at home, and only 27.5% of the respondents who preferred gardening as their favorite activities and only 4.9% stated that they really enjoyed gardening as their new favorite activities.

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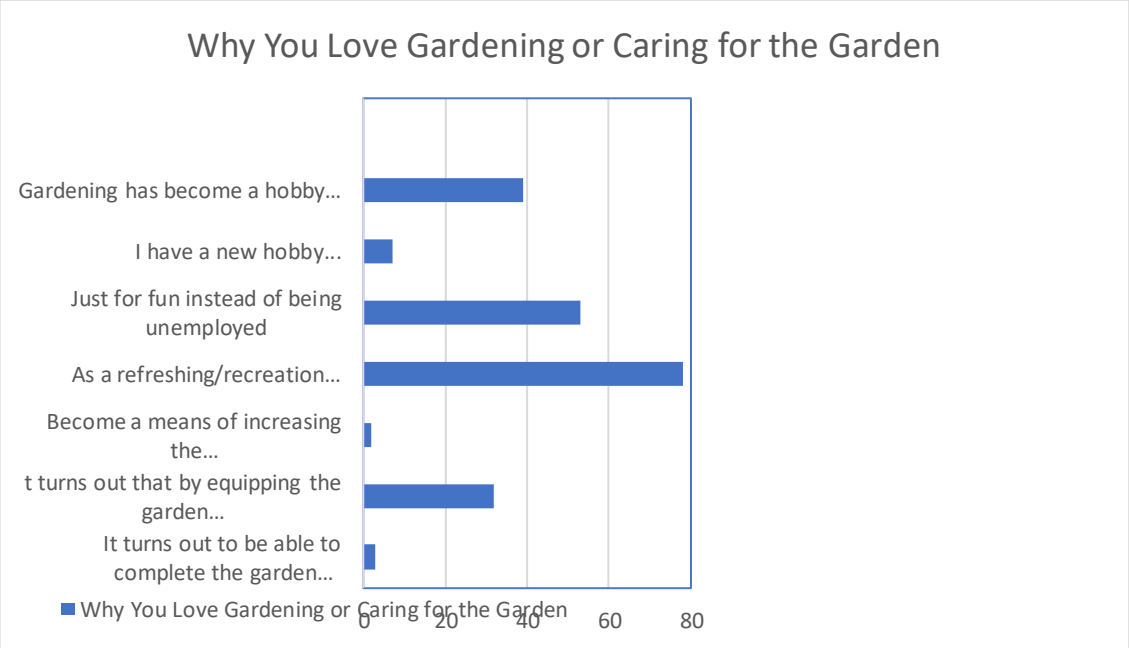

Figure 2. Reasons to do household gardening.
(Source: The Author, 2021)

Gardening is an interest before the pandemic happened with 27.5% respondents chose it, but it is increasing to be people preference (54.9%) during the pandemic. Although some respondents only try and see gardening as a better activity than doing nothing (37.5%), some respondents (22.5%) are quite happy to find gardening as their preference activity which can produce some of their daily need and make them happy.

The maintenance of household gardens.

Since the respondents are the age of students of a class on Landscape Planning and Design, it is no surprising that most of them answered that their family members who take care of their household gardening are their mothers and or fathers (79.7%), while only 44.1% students join to take care their gardens at home. Some respondents (9.1%) revealed that gardeners were hired by their families.

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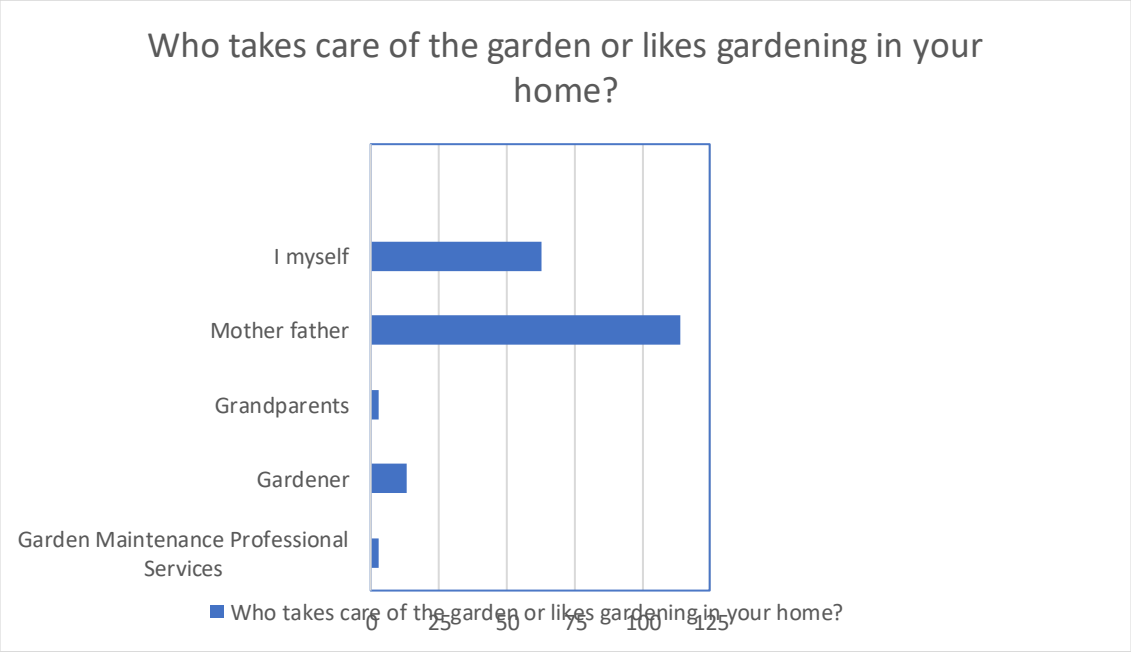

Figure 3. The maintenance of household gardens
(Source: The Author, 2021)

Other facts reveal that grandparents (grandfather of grandmother) are parts of the family members who get involved in the household gardening (2.1%). The fact that professional landscape gardener only hired by small percentage (2.1%) of the respondents' families may be related to the small plot of the gardens in the families' homes.

The maintenance of community gardens.

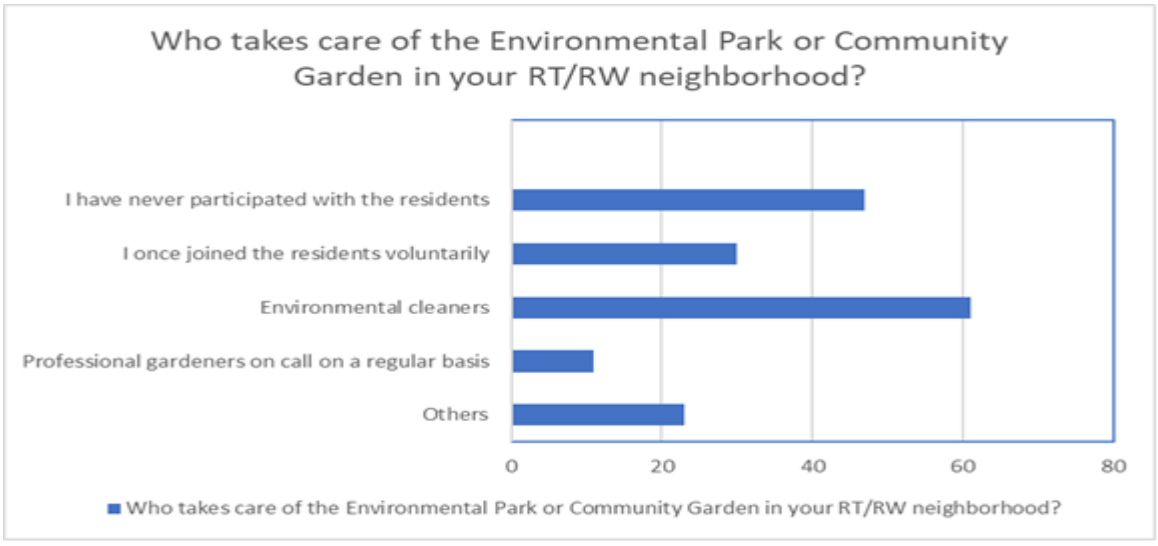

Figure 4. The maintenance of community garden
(Source: The Author, 2021)

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About the community gardening the authors obtained results as follows: most of the caretaker of the community gardens are the cleaner staffs hired by the community management (43%). Some of respondents (21%) were voluntarily involved but some others (33%) never not involved in the community. The professional gardener is seen as the least preference to take care of community garden which rise a new request of future research on landscape gardening professional role.

Comparison of time spent in household gardening before and during the Pandemic.

In comparison of time spent in household gardening, most of the respondents (50.3%) spend time about one to two (1-2) hours a week before the pandemic, and only 42% during the pandemic. Meanwhile there is a significant increasing of respondents' percentage who spend time in gardening about three to five (3-5) hours a week, from 6.7% to 27.3%. Only small increasing in percentage of group of respondents who did the gardening for more than six (6) hours a week, that is 3.7% before the pandemic to 5.7% during the pandemic. The most interesting fact is that the respondents who did not have time to do gardening despite their interest in gardening before the pandemic (22.3%) decreases to be only 16.8% during the pandemic. This indicates that the longer time spent at home during pandemic enabled the respondents to do household gardening (see the following Table).

Table 1. Comparison of Time Spent in Household Gardening Before and During the Pandemic Covid-19

No	Time for Gardening	Percentage before the pandemic (%)	Percentage during the pandemic (%)
1.	One-two (1-2) hours/week	50.3	42.0
2.	Three-five (3-5) hours/week	6.7	27.3
3.	> Six hours/week	3.7	5.7
4.	No time despite interest to do gardening	22.3	16.8
7.	Do not calculate the time	17.0	8.2
	Total percentage	100.0	100.0

Source: The Author, 2021

Perception of Gardening Movement during the stay-at-home time of pandemic.

Most of the respondents (88,3%) considered that the Gardening Movement and gardens maintenance have positive influence on the happiness and health of people in the urban community.

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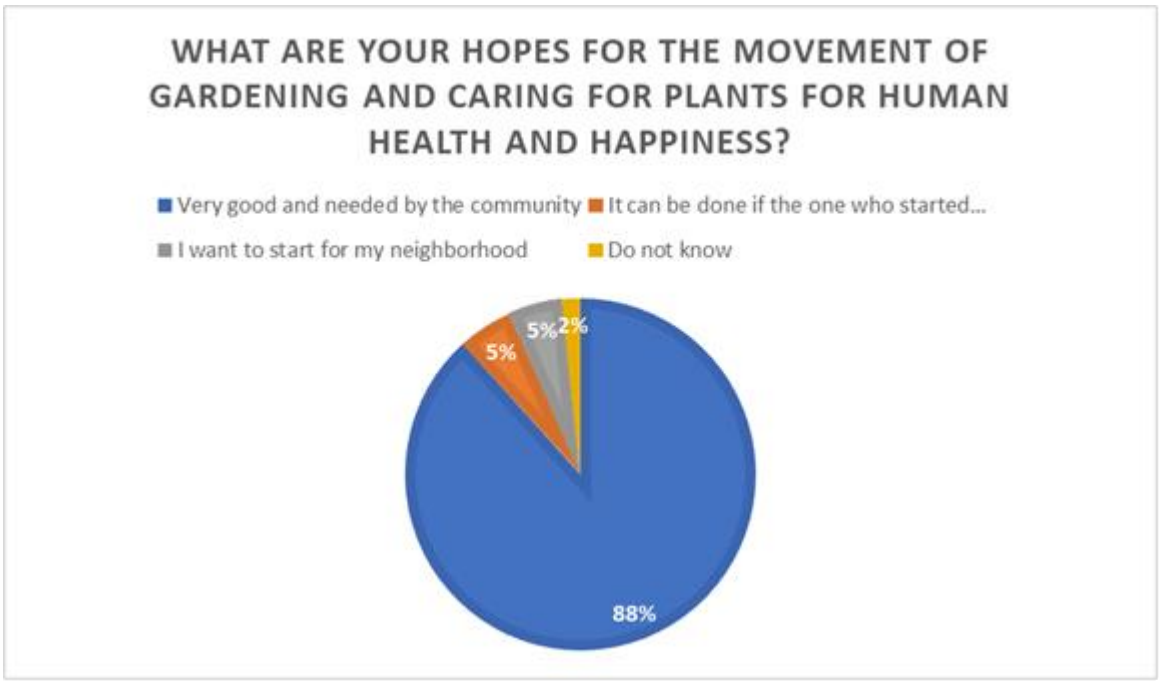

Figure 2. Respondents' perception on Gardening (Source: The Author, 2021)

The way of learning Gardening

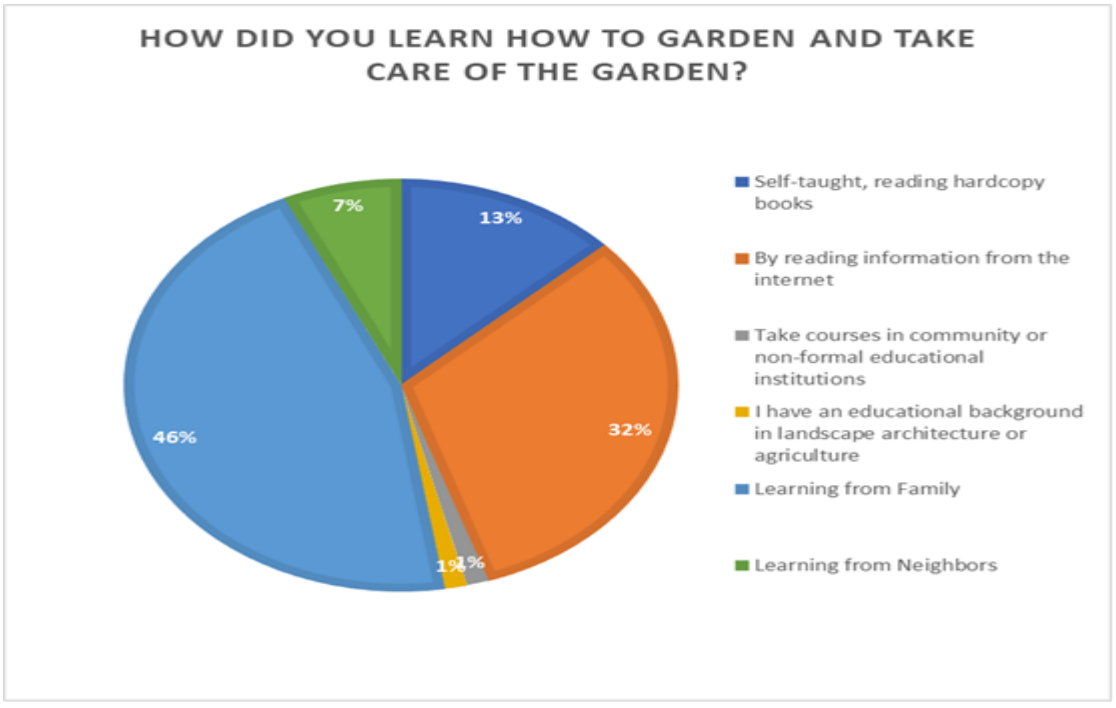

Figure 5. How the respondents learn to do household gardening
(Source: The Author, 2021)

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The way the respondents handle the gardening skills and knowledge is various. Family members interactions is the most importance factor to help the respondents in learning and practicing household gardening. The fact revealed that most of the respondents (46.2%) gained insight of gardening from the family members. In this age of technology and communication through Internet of Things (IOT), it is no surprise that the second group of respondents (32.2%) obtained the information of gardening from the websites. Some respondents gained the information on gardening from reading the books (13.3%), and the least (7%) having the sharing knowledge from the neighbors.

Types of Plants Grown in Household Gardens.

Various plants were planted by the respondents, from trees to grass. The classification of plants mentioned by the respondents could be seen in the following table:

Table 2. Classification of Plants' grown in Household Gardens.

No	Plants' Classification	Percentage of ownership (%)	Number of trees names mentioned (species)
1.	Shade trees	67.2	12
2.	Fruit trees	61.7	19
3.	Shrubs (ornamental)	36.2	13
4.	Shrubs (medicinal herbs)	22.3	9
5.	Groundcover	26.6	8
6.	Vines	14.8	2
7.	Grass	30.5	3

Source: The Author, 2021

Most of the respondents (67.2%) revealed that they have shade trees (12 species mentioned), showing that trees with the shade function is the most preferred trees. About the same number of respondents (61.7%) owned fruit trees with 19 species mentioned indicated that fruit trees are the most popular preferences. Furthermore 36.2% of respondents owned ornamental shrubs (13 species mentioned) while 22.3% owned medicinal herbs (nine species mentioned). Only 26.6% of the respondents owned groundcover (eight species mentioned) while less respondents (14.8%) grew vines plants with only two species mentioned. Grass is still popular with 30.5% of respondents put grass on their home gardens but the grass' names is only three species known.

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The preference of continuing gardening activities if the pandemic is over.

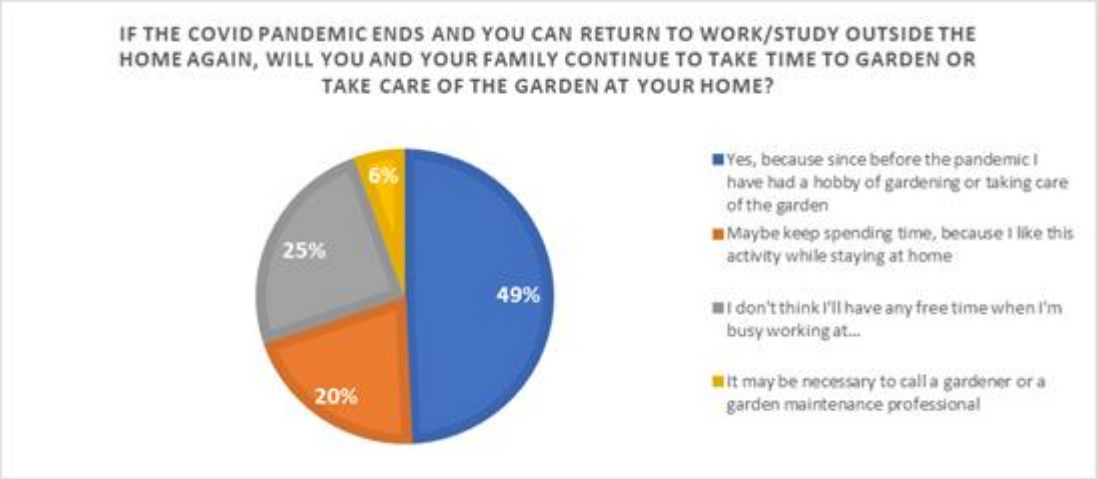

Figure 6. The preference of gardening activities after the pandemic if is over
(Source: The Author, 2021)

The respondents were requested about the possibilities of continuing the gardening activities or giving up their gardens' maintenance. Most of the respondents (49.3%) preferred to continue the gardening since they have been doing that before the pandemic happened. However, 24.7% of the respondents think that they will not have time to do gardening if they go back to work at the office. Meanwhile some respondents (20.5%) say they will manage their time to spend their time for gardening. The rest of the respondents say they might hire the professional gardener to maintain their gardens.

CONCLUSION

This research revealed that human engagement with nature increased during the pandemic shown by the frequency and time spent per week by the respondents in doing household and community gardening. The respondents' feelings of happiness by doing gardening are shown that it provides protecting capacity during the ongoing pandemic for maintaining mental and physical health, social connection, and closeness with the natural world. The companionship of family members which increases in doing household gardening can be positive for emotional-well-being for individual human interaction as well as community resilience. Considering the current Covid-19 pandemic, the authors believe that nature areas in cities have potential significant protection role in periods of pandemic.

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