



THE EFFECT OF HOME GARDENING TOWARDS THE MENTAL WELLBEING OF MEN AND WOMEN DURING THE COVID-19 PANDEMIC

RANJAN WEERAKOON^{1*}, DEEPIKA S. WEHIGALDENIYA¹
AND CHARIKAWICKRAMARATHNE¹

¹Department of Sport Science and Physical Education, Faculty of Social Sciences University of Kelaniya, Sri Lanka.

AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Received: 15 June 2021

Accepted: 19 August 2021

Published: 24 August 2021

Original Research Article

ABSTRACT

This paper focuses its attention on understanding the impact of home gardening on the mental wellbeing of Sri Lankan men and women during the COVID-19 pandemic. It also investigates whether gender affects in the effects of home gardening on the mental health of people. Primary data was used to understand the effects of home gardening on the mental wellbeing of people. The random sampling method and the questionnaire method was used to collect data from 400 respondents. The online survey method was used to collect data where Face book acted as the social media platform which was used to reach the respondents. The data was analysed using the SPSS (23.0) statistical software and descriptive statistics. The independent sample t- test was used to get the final conclusion of the study. By reviewing past literature, the present study has constructed four variables namely Reduce Depression (RD), Reduce Stress & Anxiety (RSA), Life Satisfaction (LS), and Self Esteem (SE) which can measure the mental wellbeing of an individual. The results show that home gardening helps in coping with psychological problems which can arise during the period of COVID-19. It was also found that home gardening has different effects on the psychological wellbeing of people based on the gender. Furthermore, home gardening affects in reducing depression, stress and anxiety while also improving one's self-esteem and life satisfaction. In a managerial perspective, the results of the current study are important to policy makers and practitioners to prepare initiatives to promote home gardening in the country. As future research implications, researchers can investigate as to how home gardening can influence on the psychological wellbeing of people by using different contexts and analysis methods.

Keywords: Gender; mental well-being; home gardening; COVID-19.

1. INTRODUCTION

The Mental Health Foundation [1] defines mental health as the way how people think and feel about themselves and their lives. The foundation has also illustrated as to how mental health affects the actions

of people. Mental Problems do not only affect a person in an individual basis but the entire society as a whole. Therefore, the global health management finds the coping up with mental disorders of people as one of its major challenges. The risk of mental disorders is high in both male and female including the poor,

*Corresponding author: Email: ranjan@kln.ac.lk;

homeless, unemployed, people with low education, migrants, indigenous population, children, adolescents, abused women and the neglected elders. As many as 450 million people suffer from mental or behavioral disorders [2].

COVID-19 has impacted the lives of people all around the world. Isolation and social distancing measures have been taken all over the world to avoid the disease from spreading. [3]. On these grounds, since January 2020, various countries started implementing regional and national containments or lockdowns. In this context, the closing of schools, organizations, work places, and activity areas were one of the most important actions done during the lockdown. These inescapable situations, which are out of the ordinary make people feel stressed, anxious and powerless.

Sri Lanka is a country which is being affected by the Covid -19 virus since the year 2020. As per the guidelines of the WHO, the country had to take action to go for a lockdown in March 2020. This made people undergo many physical and mental problems.

In terms of surviving in a period of lockdown, people engage in different types of activities at home. Gardening is one of the main activities which allow people to take care of their physical and mental health. Gardening is an activity which brings a lot of joy to people by also providing a chance to enhance self-esteem, inner peace, personal values and self-sufficiency [4]. Past studies have revealed that the involvement in regular gardening activities can provide a wide range of health outcomes such as reduction in depression, anxiety and body mass index as well as an increase in life satisfaction, quality of life and sense of community.

Researchers have shown that the concept of gardening effects on the mental well-being of people, but it seems that the researches are often focused on a specific group of people. As an example, Ambrose et al., 2020 shows how Gardening has affected the mental well-being of people living in urban areas. Moreover, Austin et al., [5] and Scott et al. [4] have done research on how gardening affects the mental well-being of Australian and American adults. No definitive research has yet been done on how the concept of gardening effects on the mental well-being of people trapped in houses due to the current global situation of COVID-19. In addition, there are no empirical evidences about how home gardening effects on the mental wellbeing of men and women during the period of COVID-19 and whether men and

women perceive the effects of home gardening on their mental wellbeing differently.

Past literature in leisure and wellbeing has neither empirically investigated as to how gardening effects on the mental wellbeing of people nor recognized the factors which contribute to the mental wellbeing of people during lockdown situations. Therefore, the purpose of the current study is to understand the factors which contribute to the psychological wellbeing of people during the COVID-19 lockdown in Sri Lanka and also to understand whether the effects of home gardening on the mental health are different based on gender. The current study also sheds light over the existing research gap between leisure and wellbeing.

2. LITERATURE REVIEW

Nowadays people focus more on their mental health than before by engaging in sports, aesthetic activities, gardening and preparing food. Among these, home gardening is an activity which is practiced in many countries around the world to strengthen economy and reduce food poverty. Gardening is also recognized as a concept which improves and develops the physical and mental wellbeing of people. The physical activity gained through gardening helps in reducing chronic non-communicable diseases, stress, food poverty and also improves personal wellbeing. Lovell et al. [6] and [7] researchers have concluded that 86% of segregated house workers who engage in gardening have reported that their stress has reduced after seeing their plot (Young et al., 2020). Meta-analysis [8] has shown that people involve more in home gardening as it is the cheapest method which allows people to gain both physical and mental benefits. Gardening is good for health as the physical activity contributes in burning calories and the exposure to sunlight controls blood pressure and provides vitamin D [1]. The UK government policy too recommends gardening as a method for the improvement of health and well-being [9].

Gardening has been proved as a method which treats depression of adults [10]. Bodily inactivity discourages a good physical and mental health [5]. Home gardening can be viewed as a method for seniors to boost their self-esteem and enhance their mental fulfillment while also reducing depression.

Home gardening can be a great way for people in the suburbs to relieve their financial and health-related stress that comes with the rising urbanization. A good mental health contributes in enhancing the identity of a person [11]. Elings (2006) has identified three

methods through which therapeutic horticulture can boost health and wellbeing [10].

According to past studies, the concept of home gardening has a favorable impact on mental health. Home gardening allows people to gain many personal benefits. The Covid-19 virus having wreaked havoc the mental health of millions of individuals worldwide is widely regarded as one of the world's most serious physical and psychological threats. Even in the event of such a pandemic, it is reasonable to believe home gardening as a mean of enhancing the mental health of people. Accordingly, this paper focuses its attention on the significant different effects of home gardening on the mental wellbeing of people based on the gender during the period of COVID-19 in Sri Lanka.

3. METHODS

3.1 Participants

The purpose of this paper is to identify the differences of the effects of home gardening on the mental health of people based on gender during the period of COVID-19. The first part of this study confirms the factors which affect the mental well-being of people during the period of COVID 19. The second part of the study identifies as to how the factors are performed differently based on the gender. The current study has used the random sampling method to collect data from 400 respondents. The questionnaire method was used to collect data and questions were posted on Facebook.

Demographic information namely gender, age, area of residence and occupation are shown in Table 1.

Accordingly, out of 400 respondents, 150 were male (37.5%) and 250 were female (62.5%). Thus, most respondents are females. The ages of the sample participants ranged from below 15-24 years (33.8%) to 60+ years (5%) but the majority started when they were 25 to 35 years old (35.3%). 13.5% of the respondents were between 36-45 years of age. 12.5% were between 45 and 60 years of age. Interestingly, 270 out of the 400 respondents (67.5%) live in the village area. The rest (n=130) resides in the urban areas. Occupational wise most of them belong to the private sector (25%) while 19.8% of the respondents belong to the government sector and many of the respondents were students (35.8%). Moreover, 12.8% of the total sample were non-employed respondents.

3.2 Procedures

The questionnaire which was prepared for this study was presented in both Sinhala and English mediums. The online survey method was used to collect data from the sample population. Google forms were used to prepare the online questionnaire. The online questionnaire was distributed through social media. The answering of all questions was compulsory. Therefore, data was collected without missing any values. In terms of the sample size, 400 questionnaires were confirmed for the analysis.

3.3 Data Analysis

The SPSS version 21.0 software was used to analyze the data which was obtained through the questionnaire. Descriptive statistics (Mean and Standard Deviation) and independent sample T-Test were used to obtain results from raw data.

Table 1. Participants' Demographic Factors

Variables	Category	n	%
Gender	Male	150	37.5
	Female	250	62.5
Age	15-24	135	33.8
	25-35	141	35.3
	36-45	54	13.5
	45-60	50	12.5
	60+	20	5
Area of residence	Village area	270	67.5
	Urban Area	130	32.3
Occupation	Government Sector	79	19.8
	Private Sector	100	25
	Retired	14	3.3
	Students	143	35.8
	Non employed	52	12.8
	Other	12	3

Note: N= 400 (n representing each category as well as the percentage (%))

4. RESULTS

4.1 Group Statistics

Group statistics in this study presented in Table 2 includes basic descriptive statistics for each group. The gender based on the questionnaire for buildup constructs of the study. The five factors represent the mental wellbeing. According to the criteria of data scaling, the responds of the participants were scaled from 1 to 5 by using the Likert scale method (Strongly Agree=1, strongly disagree =5). According to the Likert scale method, if the mean value is less than 3.0 then it represents that the overall wellbeing variables are important.

Table 2 indicates the mean values of all variables as less than 3.0. This implies that home gardening impacts on the maintaining of mental wellbeing during the period of COVID-19. Among male participants, the RSA construct has the highest mean score (M=2.41, SD=0.55) and LS construct has the lowest mean score (M=2.23, SD=0.56). Among female respondents, RSA construct has the highest mean value (M=2.09, SD=0.47) and SE construct has the lowest mean value (M=2.04, SD=0.54).

4.2 T-Test

Independent sample T- test was conducted to explore as to how male and female respondents have differently perceived home gardening thereby resulted in having different effects on their mental health during the time of COVID-19 in Sri Lanka. Table 3 has shown the result of four different constructs which has evolved due to home gardening.

H₁ = There is a significant difference between male and female in how home gardening affects in reducing their depression during the period of COVID-19.

H₀ = There is no significant difference between male and female in how home gardening affects in reducing their depression during the period of COVID-19.

An independent sample t-test was performed to compare the mental health factor of female and male respondents. There were significant differences ($t(284.371) = 4.225, P < .001$) between male (M= 57.76, SD= 15.07) and female (M= 51.46, SD=13.54) regarding the effects of home gardening on their mental wellbeing. Significant value is ($p < .000$). Therefore hypothesis 01 is accepted.

H₂ = There is a significant difference between male and female in how home gardening affects in reducing their stress and anxiety during the period of COVID-19.

H₀ = There is no significant difference between male and female in how home gardening affects in reducing their stress and anxiety during the period of COVID-19.

An independent sample t-test was performed to compare the stress and anxiety factor of female and male respondents. T- Test indicated that the mean value of male (M= 60.36, SD= 13.92) is significantly greater than the mean value of female (M= 52.46, SD=11.75), ($t(273.680) = 5.819, P < .001$). The significant value is ($p < .000$). Therefore, hypothesis 2 is sustained.

H₃ = There is a significant difference between the male and female respondents in how they gain life-satisfaction from home gardening during COVID-19 Pandemic

H₀ = There is no significant difference between the male and female respondents in how they gain life-satisfaction from home gardening during COVID-19 Pandemic

Independent sampling t-test has indicated that the LS mean value of male (M= 56.46, SD= 13.75) is significantly greater than the mean value of female (M=52.14, SD=14.38), ($t(317.923) = 2.534, P < .001$). It implies that male and female perceive life satisfaction differently by engaging in home gardening during the period of COVID-19. Therefore, hypothesis 03 is accepted.

Table 2. Descriptive Statistics

	Gender	M	SD
Reduce Depression (RD)	Male	2.31	0.60
	Female	2.05	0.53
Reduce Stress & Anxiety (RSA)	Male	2.41	0.55
	Female	2.09	0.47
Life Satisfaction (LS)	Male	2.23	0.56
	Female	2.08	0.57
Self Esteem (SE)	Male	2.25	0.55
	Female	2.04	0.54

Note: Male=150; Female=250; M= Mean; SD= Stranded Deviation

Table 3. Independent sample test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig(2-tails)</i>	<i>Mean Diffe</i>	<i>Std.ErrorDiffe</i>	95% Confidence Interval of Diffe	
									<i>Lower</i>	<i>Upper</i>
Reduce Depression (RD)	Equal variances assumed	3.40	0.06	4.35		.000	0.25	0.05	0.13	0.36
	Equal variances not assumed			4.22	284.37	.000	0.25	0.06	0.13	0.36
Reduce Stress & Anxiety (RSA)	Equal variances assumed	4.36	0.03	6.07		.000	0.31	0.05	0.21	0.41
	Equal variances not assumed			5.81	273.68	.000	0.31	0.05	0.20	0.42
Life Satisfaction (LS)	Equal variances assumed	0.03	0.85	2.52		.012	0.14	0.06	0.03	0.26
	Equal variances not assumed			2.53	317.92	.012	0.14	0.06	0.03	0.26
Self Esteem (SE)	Equal variances assumed	0.49	0.48	3.80		.000	0.21	0.06	0.10	0.32
	Equal variances not assumed			3.80	313.58	.000	0.21	0.06	0.10	0.32

H₄= There is a significant difference between the female and male respondents in how they maintain self-esteem from home gardening during COVID-19 Pandemic.

H₀= There is no significant difference between the female and male respondents in how they maintain self-esteem from home gardening during COVID-19 Pandemic.

Independent sample t-test was used to compare the self-esteem factor of female and male respondents. The results indicate that the mean value of male (M= 56.46, SD= 13.75) is significantly greater than the mean value of female (M= 51.06, SD=13.73), $t(313.585) = 3.808, P < .001$. Significant value is ($p < .000$). Therefore, hypothesis 04 is accepted.

Overall results of tables 02 and 03 imply that home gardening is important to maintain the mental wellbeing during the period of the COVID-19 lockdown. Moreover, the t-test (see table 03) results show that male and female perceive the effects of home gardening on their psychological wellbeing differently.

5. DISCUSSION

The results of the study suggest the importance of maintaining psychological wellbeing especially in a situation of a world pandemic. The theoretical perspectives analyzed herein can help the health practitioners and policy makers to investigate the mental wellbeing of people. The data indicates that the people who were at home during the period of COVID-19 engaged in home gardening to maintain their psychological wellbeing. Thus, home gardening has contributed in sustaining the mental health of people during the period of the lockdown. Home gardening is promoted in many countries as it helps in enhancing the physical and mental wellbeing of citizens. Gardening helps in improving personal wellbeing. It also helps in reducing food poverty [6]. Van Den Berg and Custers [7] have stated that the mental stress of the segregated house owners significantly decreases after viewing their plots. In line with the results of the cited authors, the results of the current study too show as to how home gardening has enhanced the mental health of people during the period of COVID-19. The meta-analysis done by Soga et al. [8] to understand the effects of home gardening on the mental wellbeing of people has contributed in supporting the findings of this study. Its results have reported that home gardening is the cheapest way to gain the necessary physical activities and mental strength by reducing stress, anger, fatigue, depression and anxiety. Instead of spending money on

professional trainers, home gardening provides easy access to physical activity which is necessary for human beings [1]. The government should take necessary steps to promote home gardening throughout the country so that people can have a good mental stability to cope up with the prevailing natural disaster. This will in turn benefit the country by reducing the health cost and improving the food security. By promoting home gardening in the country, diseases (Cancer and Kidney diseases) which are caused by chemical fertilizers can also be reduced [9]. Another study done by Austin et al. [5] has reported that home gardening has effectively influenced on the mental wellbeing of senior adults as a treatment for depression [10]. In line with the aforementioned result, the findings of the present study have revealed that home gardening has effectively influenced in reducing depression of people who were forced to stay at home during the COVID-19 lockdown period. The results of the Austin et al. study [5] have furthermore proved that home gardening effects in boosting the self-esteem and reducing depression of senior citizens. Similar to the findings of the Austin et al. study [5] the current study too has found out that home gardening has helped people enhance their self-esteem while they were at home under the COVID-19 travel restrictions. Home gardening can be identified as an effective and efficient way of improving life satisfaction, health, wellbeing and social cohesion [11]. Supporting the aforementioned study, the present study too has reported that home gardening has enhanced the sense of life satisfaction in people who suffered due to COVID-19. The results of the current study reveal that home gardening effectively helps in coping up with the mental disorders of people who stay at home during the period of COVID-19. Past literature on health and leisure too has proved the effectiveness of home gardening on the psychological wellbeing of people. Health authorities and practitioners can use these empirical evidences to initiate actions to promote home gardening around the country in order to prevent people from suffering from mental disorders. The concept of gardening is a good way of reducing stress which can arise due to financial and health related problems.

The findings of the current study contribute in extending the existing knowledge of leisure and wellbeing by providing empirical evidence on the positive effects of home gardening on the mental wellbeing of people. While past researchers of the field of leisure and wellbeing have identified home gardening as an activity which manages depression, anxiety and stress, self-esteem and life satisfaction, it is the current study that has empirically proven how home gardening can show different effects on the

mental wellbeing of people based on the gender. This finding has extended the theoretical perspective of leisure and wellbeing. Men and women are different from each other biologically, psychologically and also in the way they think and feel. The results of the current study confirm this difference between men and women by showing that home gardening too has different effects on the mental wellbeing of people according to the gender. Accordingly, home gardening can be identified as an activity which helps in enhancing the psychological wellbeing of people by improving self-confidence and fulfilment during difficult situations.

6. CONCLUSION

People all over the world are still fighting against the COVID-19 virus. The governments are taking initiatives to prevent the pandemic. The main health precautions include wearing masks, washing hands and maintaining social distance. The World Health Organization [12] has mentioned that people can suffer from psychological disorders as a result of the preventive measures taken against COVID-19. The current study has investigated as to how home gardening has influenced the mental wellbeing of people who have stayed at home during the COVID-19 lockdown in Sri Lanka. This study makes an important contribution by confirming the findings of past literature and also by extending the existing literature through the quantitative analysis of how home gardening effects on the psychological wellbeing of Sri Lankans during the COVID-19 lockdown period.

This study, similar to previous literature, has confirmed that home gardening controls many mental disorders [9] [11] [4]. Home gardening has also improved people's life satisfaction and self-esteem during the period of the pandemic. The study has identified the new finding which is the difference of effects of home gardening on people based on gender which was not found by previous literature. Moreover, the health practitioners can use the findings of this study to avoid the possibility of people suffering from mental illnesses. The government can use the findings of this study to implement strategies that enhance the mental wellbeing of people not only during the period of COVID-19 but also in similar situations. Thus, home gardening can be recognized as a method which provides both mental and physical benefits. It also acts as a solution for the world food poverty. By considering the aforementioned benefits, the government should take necessary steps to promote the concept of home gardening which enhances the wellbeing of people and also secures the necessity of food in a country.

LIMITATION AND FUTURE RESEARCH RECOMMENDATIONS

More research should be conducted to test as to how home gardening effects on the mental wellbeing of people during the mid of the COVID-19 epidemic. The current research has only investigated the effects of home gardening on the mental wellbeing of Sri Lankans. However, future researchers can explore on the effects of home gardening on the mental wellbeing of people by using different socio-cultural backgrounds as it is worth a generalization. Further, the current study has limited itself to the quantitative research approach and the questionnaire method was employed to gather data from participants through the online survey method. However, researchers cannot obtain real perception from the respondents through close-ended questionnaires. Therefore, future researchers should conduct the study on home gardening and wellbeing by using a qualitative research approach. It can help in gaining a real perception from the people on how home gardening influence on their mental wellbeing. Moreover, the current study has not identified the different effects of home gardening on the mental wellbeing of the urban and rural people. The current research has also not explored the effects of home gardening differing due to factors like education, occupation and income level. Accordingly, future researchers can explore the effects of home gardening on the mental wellbeing of people who face similar incidents like the COVID-19 pandemic.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Thompson R. Gardening for health: A regular dose of gardening. *Clinical Medicine, Journal of the Royal College of Physicians of London*. 2018;18(3):201–205.
2. World Health organisation. Investing in M E N T A L H E A L T H. In *Investing in mental health*; 2003.
3. Shen K, Yang Y, Wang T, Zhao D, Jiang Y, Jin R, et al. Diagnosis, Treatment, And Prevention Of 2019 Novel Coronavirus

- Infection In Children: Experts' Consensus Statement. *World Journal of Pediatrics* : WJP; 2020. *Global Pediatric Pulmonology Alliance*. 2019;1–9.
4. Scott TL, Masser BM, Pachana NA. Positive aging benefits of home and community gardening activities: Older adults report enhanced self-esteem, productive endeavours, social engagement and exercise. *Positive Aging Benefits of Home and Community Gardening Activities: Older Adults Report Enhanced Self-Esteem, Productive Endeavours, Social Engagement and Exercise*. 2020;8: 1–13.
 5. Austin N, Elizabeth. Johnston AM, Yvonne.Morgan LL. (1).pdf. *Community Gardening in a Senior Center:A Therapeutic Intervention to Improve the Health of Older Adults*. 2006;40(1):48–56.
 6. Lovell R, Husk K, Bethel A, Garside R. What are the health and well-being impacts of community gardening for adults and children: A mixed method systematic review protocol. *Environmental Evidence*. 2004;3(1):1–13.
 7. Van Den Berg AE, Custers MHG. Gardening promotes neuroendocrine and affective restoration from stress. *Journal of Health Psychology*. 2011;16(1):3–11.
 8. Soga M, Gaston KJ, Yamaura Y. Gardening is beneficial for health: A meta-analysis. 2017;5: 92–99.
 9. Genter C, Roberts A, Richardson J, Sheaff M. The contribution of allotment gardening to health and wellbeing: A systematic review of the literature. *British Journal of Occupational Therapy*. 2015;78(10):593–605.
 10. Hawkins JL, Mercer J, Thirlaway KJ, Clayton DA. “Doing” gardening and “being” at the allotment site: Exploring the benefits of allotment gardening for stress reduction and healthy aging. *Ecopsychology*. 2013;5(2):110–125.
 11. Koay WI, Dillon D. Community gardening: Stress, well-being, and resilience potentials. *International Journal of Environmental Research and Public Health*. 2020;17(18):1–31.
 12. World Health Organisation. Mental health and psychosocial considerations during the COVID-19 outbreak. *Mental Health and Psychosocial Considerations during the COVID-19 Outbreak*. 2020;1–6.