

# The Effect of The Application of Gardening Modality Therapy on The Quality of Life of The Older People

*By Ariesti et al*

## Original Research Article

# THE EFFECT OF THE APPLICATION OF GARDENING MODALITY THERAPY ON THE QUALITY OF LIFE OF THE OLDER PEOPLE

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### Abstract

**Background:** Humans experience the natural process of aging. The most important stage is in the old or elderly stage, where a person naturally experiences c<sup>h</sup>anges and decreases in conditions from physical, social, psychosocial. One way to optimize the cognitive function of the elderly is to use modality therapy. One type of modality therapy is gardening, gardening activities can provide opportunities for the elderly to do physical 37vity, release physical energy and emphasize physical movements.

**Objectives:** This study aimed to analyze the effect of the application of gardening modality therapy on the quality of life of the older people in Puskesmas Tajinan Malang 31gency.

**Methods:** The design used quasi-experimental with one group pre-posttest design. The population in this study were all old people who participated in prolans activities and were aged > 50 years totaling 48 people. This research was conducted for one month. Measurement of the quality of life of the elderly used the WHOQOL-BREF questionnaire, while for the measurement of garden 12 therapy used an observation sheet. Data analysis was carried out using the statistical test used was the Wilcoxon Test with  $\alpha$  0.05.

**Res<sup>u</sup>l<sup>t</sup>s:** The results of bivariate analysis using the Wilcoxon test show that the P value is 0.317 > 0.05, which means that there is no signific<sup>i</sup> effect of providing gardening modality therapy 2 times per week on the quality of life of the older people, w<sup>h</sup>ile the provision of gardening modality therapy 3 times per week on the quality of life of the older people the results of biv<sup>ar</sup>iate analysis using the Wilcoxon test show that the P value is 0.00 44 < 0.05, which means there is a significant effect.

**Conclusion:** The effect of gardening 15 therapy on the quality of life of the elderly can be used as an alternative to improve the quality of life of the elderly, because gardening can make the elderly more productive, the elderly can also be a stimulation for the elderly to socialize and do physical activity.

**Keywords:** Gardening, Modality Therapy, Older people, Quality of Life

## INTRODUCTION

Older people are a person who has reached the end of life with an age that has reached the age of 60 years and above. The World Health Organization (WHO) says that the older people are divided into three groups, namely those aged 60-74 years are included in old age, those aged 75-90 years are included in old age, while those aged more than 90 years are included in very old age. (Utami et al., 2021).

Along with the increase in the number of older people, the percentage of older people with health problems is also increasing. The young older people population (60-69 years) at this age experienced health complaints around 46.16%, increasing to 51.78% in the middle older people (70-79). And 51.50% in the older people (80+). This means that almost half of the older people experience both physical and psychological health complaints (48.14%). Even so, the older people morbidity rate in 2020 is the lowest point during the last six years (BPS, 2020).

In general, older people disease is a type of degenerative non-communicable disease caused by age. Usually, diseases experienced by the older people are heart disease, stroke, diabetes, rheumatism and injury (Ministry of Health, 2018). These diseases are chronic diseases with high medical costs. If not cured, it will cause disability or disability which results in disruption of all daily activities carried out by the older people (Sari & Susanti, 2017).

The quality of life of the older people describes the superiority of a person judged by the ability to make meaning of life, these advantages can be seen in, interpersonal relationships, life goals, personal development, personal control, intelligence, and material conditions (Eriani et al., 2018). There are four domains in the quality of life of the older people. Namely: physical, psychological, social and environmental domains (WHOQOL,

2004). The quality of life of the older people should be an important concern for health workers because it can be used as a reference for the success of actions, interventions or treatments, and affect the welfare of the older people (Hayulita et al., 2018). In addition, quality of life is a functional state of the older people in the maximum or optimal phase, which allows them to enjoy their old age with meaning, happiness, and quality. If the quality-of-life decreases, it will have an impact on the morbidity and mortality rates of the older people which are increasing (Anggraini, 2017).

The elderly can be categorized as a vulnerable population if they do not meet enabling factors such as housing, health insurance, and health facilities and services. In addition, reinforcing factors such as family and social support also play a role. This puts the elderly at higher risk of poor health. In the elderly there is a decrease in fitness and physical fitness, one of the causes is a lack of physical activity. One way to optimize the cognitive function of the elderly is to use modality therapy. Modality therapy is a form of supportive psychotherapy in the form of activities that generate independence manually, creatively and educationally for self-adjustment to the environment and improve the patient's physical and mental health status (Hilda fauziah, 2016).

Modality therapy aims to develop, maintain, restore function and or seek compensation/adaptation for daily activities, productivity and leisure through training, stimulation remediation and facilitation. Modality therapy improves an individual's ability to perform activities of daily living. One type of modality therapy is gardening, gardening activities can provide opportunities for the older people to do physical activity, release physical energy and emphasize physical movements (Wells & Nancy, 2014). Beetlestone (2012) states that gardening has very real benefits for physical development,

which in turn will affect creative development. When gardening, a person will have plenty of **18**ce to move and exercise their body with large-scale movements such as digging, scratching, running and bending.

Gardening therapy is a mind-body based psychotherapy approach. When compared to verbal therapy, art therapy makes the elderly more able to express feelings at the sensory and kinesthetic levels. In contrast to verbal therapy, which expresses feelings at the affective and cognitive levels (Sari, 2021). Gardening therapy can help clients to engage in the process of farming. This physical activity can release physical tension and help reduce stress, anxiety, and feelings of helplessness (Hidayati, 2013). Gardening therapy is a form of active therapy that is part of patient care that can improve body health, and is one of the nonverbal psychotherapeutic approaches that has received a lot of attention because of its effectiveness in overcoming loneliness (Paramitha, 2021).

From the population pyramid **33** Tajinan sub-district in 2023, it is found that the age group of 35-39 years and 25-29 years is the highest age group, meaning that it can be said that the age group includes productive age. While the lowest age group is at the age of 70-74 years and 75 years and above, it can be said that the life expectancy in the Tajinan Health Center working area is still low. So it can be concluded that the Puskesmas working area still needs comprehensive public health efforts, starting from promotive, preventive, curative and rehabilitative periodically to achieve optimal public health status. The government has launched a program that has b**28** implemented by the Puskesmas, namely the Chronic Disease Management Program (Prolanis) is a health **32** service system and a proactive approach **32** involving participants, health facilities and BPJS. At the Tajinan Health Center, Prolanis activities are carried out once a week every Friday. The older people who come around 30 older people people and

most of the older people who suffer from hypertension and DM.

**Objective(s):** to explore the effect of the application of gardening modality therapy on the quality of life of the older people in the Prolanis group of the Tajinan Health Center, Malang Regency.

## METHODS

### Study Design **11**

The design used in this research is Quasi-experiment **14** al with One group pre - post test design. In this design there is no comparison group (control), but at least the first observation (pretest) has been made which allows testing changes that occur after the experiment.

### Setting **41**

This research was conducted in the working area of Tajinan Health Center Malang Regency in May-June 2024.

### Research **5** Subject

The population in this study were all **32**er people people who participated in prolanis activities at the Tajinan Health Center, Malang Regency as many as 30 people with the criteria age  $\geq 50$  years, willing to be respondents, were in place when the research was carried out, older people people who were still able to do activities and did not experience hearing loss and senile dementia.

In determining the sample size, researchers used **3** total sampling. Total sampling is a sampling technique where the number of samples is the same as the population. The reason for taking total sampling is because the population is less than 100. So, the number of samples in this study was 30 people.

### Instruments

The research instrument used was a WHOQOL-BREF questionnaire with a Likert scale in the form of 26 questions. In this study

using a standardized questionnaire, the validity test was not carried out again.

#### Intervention

The intervention in this study was a gardening technique using the Wick system, using used mineral water bottles (Lubis, 2014). The type of vegetables planted are sweet mustard seeds or caisim because the planting time is fast and easy to maintain. The older people do gardening in groups and plant together.

#### Data Analysis

The analysis was carried out in three stages, the first stage was univariable analysis. In this analysis, the research variables were analyzed descriptively to obtain an overview of the frequency distribution of respondents. The second stage is bivariate analysis to determine the effect of the independent variable on the dependent variable. To analyze the effect of the application of gardening modality therapy on the quality of life of the older people in the Prolanis group of Puskesmas Tajinan Malang Regency using bivariate analysis processing using SPSS 16.0 software. The statistical test used was Wilcoxon test with  $\alpha$  0.05. Data or variables contain categorical scale (ordinal) Wilcoxon test is a test to find the effect between pre and post intervention.

#### Ethical Consideration

The research has received ethical approval from the Komite Etik Penelitian Kesehatan Universitas Hafshawaty Zainul Hasan, based on ethical certificate 079/KEPK-UNHASA/VI/2024.

Respondents who are willing to participate in this study sign informed consent of their own volition without coercion from any party. This research did not bring harm to respondents. Respondents could withdraw from the study when they felt insecure during the study process.

## RESULTS

General data in this study is data related to patient characteristics including age, occupation, education, and marital status. The results of the analysis related to general data are as follows:

**Table 1. Frequency Distribution related to Respondent Characteristics**

| Variables             | Gardening Modality Therapy |      |                  |      |
|-----------------------|----------------------------|------|------------------|------|
|                       | 2 times per week           |      | 3 times per week |      |
|                       | n                          | %    | n                | %    |
| <b>Age</b>            |                            |      |                  |      |
| 50-55 Years           | 1                          | 12,5 | 3                | 13,6 |
| 56-60 Years           | 5                          | 62,5 | 6                | 27,3 |
| 61-65 Years           | 0                          | 0,0  | 7                | 31,8 |
| 66-70 Years           | 0                          | 0,0  | 3                | 13,6 |
| 71-75 Years           | 2                          | 25,0 | 1                | 4,5  |
| 76-80 Years           | 0                          | 0,0  | 2                | 9,1  |
| <b>Jobs</b>           |                            |      |                  |      |
| Not Working           | 1                          | 12,5 | 0                | 0,0  |
| Housewife             | 4                          | 50,0 | 8                | 36,4 |
| Farm Laborer          | 1                          | 12,5 | 1                | 4,5  |
| Farmers               | 2                          | 25,0 | 13               | 59,1 |
| <b>Education</b>      |                            |      |                  |      |
| Elementary            | 4                          | 50,0 | 16               | 72,7 |
| Intermediate          | 3                          | 37,5 | 6                | 27,3 |
| Higher                | 1                          | 12,5 | 0                | 0,0  |
| <b>Marital Status</b> |                            |      |                  |      |
| Widow/Widower         | 3                          | 37,5 | 8                | 36,4 |
| Married               | 5                          | 62,5 | 14               | 63,6 |

Based on Table 1, it can be seen that the characteristics of respondents based on age show that in the group of respondents given gardening therapy 2 times per week most of them are between 56-60 years old, as many as 5 people (62.5%), while in the group of respondents given gardening therapy 3 times per week most of them are between 61-65 years old, as many as 7 people (31.8%). Based on occupation, it shows that in the group of respondents given gardening therapy 2 times per week, half of them work as housewives, namely 4 people (50.0%), while in the group of respondents given gardening therapy 3 times per week most of them work as farmers, namely 13 people (59.1%). Based on the level of



education, it shows that in the group of respondents who were given gardening therapy 2 times per week, half of them had a primary level education, namely 4 people (50.0%), while in the group of respondents who were given gardening therapy 3 times per week most of them had a primary level education, namely 16 people (72.7%). Based on marital status, it shows that in the group of respondents given gardening therapy 2 times per week, most of them are married, namely 5 people (62.5%), while in the group of respondents given gardening therapy 3 times per week most of them are also married, namely 14 people (63.6%).

20 Special data in this study are data related to the quality of life of the older people between before and after being given the intervention both in the group given gardening therapy 2 times a week and the group given gardening therapy 3 times a week. The results of the analysis are as follows:

20  
**Table 2. Frequency Distribution Related to The Quality of Life of The Older People Before Being Given Gardening Modality Therapy**

| Older people Quality of Life | Modality Therapy Gardening |      |                  |      |
|------------------------------|----------------------------|------|------------------|------|
|                              | 2 times per week           |      | 2 times per week |      |
|                              | n                          | %    | n                | %    |
| <b>Before Therapy</b>        |                            |      |                  |      |
| Less                         | 0                          | 0,0  | 0                | 0,0  |
| Enough                       | 4                          | 50,0 | 17               | 77,3 |
| Good                         | 4                          | 50,0 | 5                | 22,7 |

4 Based on table 2, it can be seen that the quality of life of the older people before being given an intervention in the form of gardening modality therapy that in the group given gardening therapy 2 times a week each had a quality of life in the moderate category as many as 4 people (50.0%) and a good category as many as 4 people (50.0%) and in the group given gardening therapy 3 times a week almost

all had a quality of life in the moderate category 4 namely 17 people (77.3%).

Based on table 3, it can be seen that the quality of life of the older people after being given an intervention in the form of gardening modality therapy that in the group given gardening therapy 2 times a week almost all have a quality of life in the good category, namely as many as 6 people (75.0%) and in the group given gardening therapy 3 times a week all respondents have a quality of life in the good category, namely 22 people (100.0%).

**Table 3. Frequency Distribution Related to Older People Quality of Life After Being Given Gardening Modality Therapy**

| Older people Quality of Life | Modality Therapy Gardening |      |                  |       |
|------------------------------|----------------------------|------|------------------|-------|
|                              | 2 times per week           |      | 2 times per week |       |
|                              | n                          | %    | n                | %     |
| <b>After Therapy</b>         |                            |      |                  |       |
| Less                         | 0                          | 0,0  | 0                | 0,0   |
| Enough                       | 2                          | 25,0 | 0                | 0,0   |
| Good                         | 6                          | 75,0 | 22               | 100,0 |

In order to determine the effect of gardening modality therapy on the quality of life of the older people, researchers conducted a bivariate analysis test using the Wilcoxon test. The results of the bivariate analysis test are as follows:

**Table 4. Results of Bivariate Analysis of the Effect of Gardening Modalities Therapy with Older people Quality of Life**

| Providing Gardening Therapy | Neg. Ranks | Pos. Ranks | Ties Value | P <sub>value</sub> (Wilcoxon Test) |
|-----------------------------|------------|------------|------------|------------------------------------|
| 2 times per week            | 1          | 3          | 4          | 0,317                              |
| 3 times per week            | 0          | 17         | 5          | 0,000                              |

45 Based on table 4, it can be seen that after being given gardening therapy, the group

given gardening therapy 2 times per week shows a negative ranks value of 1, which means that there is only 1 respondent who has a decrease in quality of life, a positive ranks value of 3, which means that there are 3 respondents who have an increased quality of life, a ties value of 4, which means that there are 4 respondents who have a fixed quality of life, namely no decrease or increase. In addition, the results of bivariate analysis using the Wilcoxon test show that the P value is  $0.317 > 0.05$ , which means that there is no significant effect of giving gardening modality therapy 2 times per week on the quality of life of the older people, in the group given gardening therapy 3 times per week shows a negative ranks value of 0, which means that none of the respondents have a decreased quality of life, a positive ranks value of 17, which means that there are 17 respondents who have an increased quality of life, a ties value of 5, which means that there are 5 respondents who have a fixed quality of life, namely no decrease or increase. In addition, the results of bivariate analysis using the Wilcoxon test showed that the P value of  $0.0001 < 0.05$ , which means that there is a significant effect of providing gardening modality therapy 3 times per week on the quality of life of the older people.

## DISCUSSION

Based on the results of the analysis, it can be seen that after being given gardening therapy, the group given gardening therapy 2 times per week shows a negative ranks value of 1, which means that there is only 1 respondent who has a decrease in quality of life, a positive ranks value of 3, which means that there are 3 respondents who have an increase in quality of life, a ties value of 4, which means that there are 4 respondents who have a permanent quality of life, namely no decrease or increase. In addition, the results of bivariate analysis using the Wilcoxon test show that the P value is  $0.317 > 0.05$ , which means that there is no significant effect of providing gardening

modality therapy 2 times per week on the quality of life of the older people.

Based on the results of the analysis, it can be seen that after being given gardening therapy, the group given gardening therapy 3 times per week shows a negative ranks value of 0, which means that none of the respondents have a decrease in quality of life, a positive ranks value of 17, which means that there are 17 respondents who have an increase in quality of life, a ties value of 5, which means that there are 5 respondents who have a permanent quality of life, namely no decrease or increase. In addition, the results of bivariate analysis using the Wilcoxon test showed that the P value of  $0.0001 < 0.05$ , which means that there is a significant effect of providing gardening modality therapy 3 times per week on the quality of life of the older people. With gardening activities can improve spirit, body health, and quality of life in general, so that the more often you do this gardening activity, the quality of life of the elderly is also expected to increase.

According to Habibullah (2018) that gardening therapy can relax the mind because breathing fresh air or touching the soil will provide new experiences, the mind will be much more relaxed. Even without realizing it beforehand, this activity relaxes the mind. A study revealed that people who spend time gardening tend to have lower stress levels.

This environmental therapy or gardening focuses the attention of the older people on conditions or problems that can trigger stress that can affect the quality of life of the older people. In addition, when doing gardening therapy, the older people are in direct contact with the soil, this soil has an effect on the brain which has an effect as an antidepressant so that it can improve mood. Bacteria in the soil can make neurons in the brain produce the hormone serotonin which is responsible for making the older people feel happy (Beo et al., 2022). The hormone serotonin is released after the formation of

active alpha waves, where when this wave emanates a feeling of calm, comfort and happiness, this wave emanates or glows when the body is in a very quiet and calm situation as is done in environmental therapy in this case the older people focus on caring for plants (Raharjo, 2020).

Relaxation itself is one of the management techniques based on the workings of the sympathetic and parasympathetic nervous systems. This relaxation can inhibit the stress experienced by the older people so that it makes the older people relaxed and calm. In the autoregulation mechanism when the older people are relaxed, it can stimulate the endorphin hormone (Magdaria, 2017). The release of endorphins is useful for producing feelings of joy or pleasure after doing certain activities and producing positive energy so that there is a suppression of the secretion of the hormone cortisol which increased earlier due to stress (Making et al., 2022).

## CONCLUSION

There is a significant effect of providing gardening modality therapy 3 times per week on the quality of life of the older people. With gardening activities can improve spirit, body health, and quality of life in general, so that more often you do this gardening activity, the quality of life of the elderly is also expected to increase.

## SUGGESTIONS

Gardening modality therapy can be one of the therapies used to improve the quality of life of the older people, with gardening time that can be done more than 3 times a week.

## ACKNOWLEDGMENT

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## DECLARATION OF CONFLICTING INTEREST

The authors declared that they have no conflict of interest.

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## AUTHOR CONTRIBUTION

**Ellia Ariesti:** Arrange research implementation, conduct literature review, collect data, compile manuscripts.

**Emy Sutiyarsih:** Collect data, analyzing data, compiling manuscripts.

**Anastasia Sri Sulartri:** Collect data and analyzing data.

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