

Original Research

Gymnastics Improve Quality Of Life

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ABSTRACT

Background: *The increase in the number of elderly people needs to be balanced with increased expectations and quality of life. One of the causes of the low quality of life of the elderly is influenced by a lack of physical activity. Efforts that can be made to improve the quality of life of the elderly are by doing physical activity or exercising regularly. This study aims to determine the effect of physical activity on the quality of life of the elderly.*

Methods: *This type of research is quantitative, pre-experimental with one group pretest-posttest design, using purposive sampling technique. The research instrument was the WHOQOL-BREF questionnaire. The research subjects were 30 people. Data analysis used the Wilcoxon test.*

Results: *As many as 80% of the subjects were in the age range 66-74 years, 26 subjects were women (53.3%), the latest education was dominated by Bachelor 43.4%. As many as 76.7% are retired civil servants, 70% still have a partner, 26.7% live with a partner and children, and 66.7% are healthy elderly without a history of disease. The results show a positive value and an increase in the mean in each domain. The asymptotic significance values of the pre-post Wilcoxon ranking test on the domain of physical and environmental conditions were 0.000 and 0.003 on psychological conditions and social relationships.*

Conclusion: *The provision of physical activity interventions in the form of flexible exercise for the elderly has a significant impact on improving the quality of life of the elderly.*

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INTRODUCTION

One indicator of health status is the increase in life expectancy, which reached 70.9 years in 2010 (Depkes, 2012). The increase in the number of elderly people raises concerns about the emergence of a triple burden, where the high birth rate of babies, the proportion of the dominant young population, and the increasing number of elderly people. This increase in the elderly population is alleged to increase the dependency ratio due to changes in physical, cognitive, and psychosocial life. Therefore, it is necessary to emphasize the importance of life expectancy and quality of life for the elderly (Rohmah et al., 2012; Depkes, 2012). Based on the results of Global Age

Watch's research in 2014, it shows that the quality of life for elderly Indonesians is ranked 47 out of 96 countries in the world. Quality of life according to WHO is defined as a person's perception of their life in the context of existing culture and value systems, related to goals, expectations, standards, and concerns in society. This is influenced by physical health, psychology, social relationships, and environmental aspects (Tate, 2020; Yuliyana, 2018).

Meanwhile, increasing old age results in a decrease in the quality of life due to the difficulty in adapting to the aging process, feeling alone, and decreasing self-confidence due to their limited physical abilities. One of the causes of the low quality of life of the elderly is influenced by physical activity (Chiquita, 2017). The elderly with a good quality of life will affect their ability to carry out various physical activities so that they can increase productivity and are enthusiastic about living a life with a high degree of welfare (Destiwati, 2016; Chiquita, 2017).

Efforts that can be made to improve the quality of life of the elderly can be done by doing physical exercise or exercising regularly. One form of this exercise is gymnastics. According to Suroto in 2004 in Pamungkas et al. (2016), gymnastics is a series of tone movements that are orderly, directed, and planned to intend to increase the functional abilities of the body which is carried out individually or in groups. The gymnastics that can be applied to the elderly are fitness and fitness for the elderly. Elderly gymnastics is a low-impact aerobic exercise with light to moderate intensity whose movements involve most of the muscles of the body according to daily movements where the right and left parts to get a balanced load (WHO, 2010).

Based on the research results of Pamungkas et al. (2016) stated that fitness for the elderly affects the quality of life for the elderly aged 60 years and over. Saftarina & Rabbaniyah (2016), proves that there is a significant relationship between giving elderly exercise to improving the quality of life of the elderly with hypertension. In this study, researchers were interested in knowing the effect of elderly exercise on quality of life.

Makamhaji Village is one of the villages with the largest population proportion in the Kartasura Regency. Based on the results of the preliminary study, there are around 100 elderly people who are members of the Indonesian Republican Wredatama Association (PWRI). The elderly who are members of PWRI have active activities in the form of routine exercise and recreation every month before the Covid-19 pandemic occurs. However, for almost a year all activities were temporarily stopped so that the elderly felt bored, had no activities, felt that their health was disturbed, and felt that their quality of life had decreased. Therefore, the researcher wanted to find out whether there was an effect of physical exercise on the quality of life of the elderly in Makamhaji Village, Kartasura District.

MATERIALS AND METHOD

This study used a pre-experimental quantitative approach with a one-group pretest-posttest design. The population in this study was all PWRI elderly in Makamhaji Village, Kartasura District. The research subjects were 30 elderly people obtained through purposive sampling technique with inclusion criteria: elderly aged 50 years or more and willing to be research subjects by applying health protocols. This was stated by the research subjects in the informed consent statement. The dependent variable in this study is the quality of life of the elderly and the independent variable is the elderly flexural exercise. The data collection technique was carried out by filling out a questionnaire about WHOQOL-BREF and documenting demographic data on elderly members of PWRI. Filling out the questionnaire was given before and after the flexible exercise intervention in the elderly. Quality of life data is divided into 4 domains, namely Domain 1 (physical health), Domain 2 (psychological conditions), Domain 3 (social relationships), and Domain 4 (environment). The quality of life score is declared good if the total score is 51-100 and the quality of life is poor if the total score is 0-50. Gymnastics is done 8 times, which is done 2 times a week, with a duration of 45 minutes, for 4 weeks.

RESULTS

This research was conducted in September-October 2020 in Makamhaji Village, Kartasura District, Sukoharjo Regency. Data on the characteristics of research subjects included: the majority of the research subjects were in the range of 66-74 years (young-old) as many as 24 elderly (80%); male gender 46.7% and female 53.3%; most recent education at undergraduate level (43.3%); 76.7% are retired, civil servants. Marital status, 70% of the subjects still have a partner, and 26.7% live with husband/wife and children. As for the history of illness, as many as 5 elderly (16.7%) suffered from hypertension and the majority of the elderly (20 subjects / 66.7%) had no history of the disease. This can be seen in Table 1.

Table 1. Characteristics of respondents based on age, gender, education, occupation, marital and history of diseases

Characteristics	Frequency	Percentage
Age (years)		
55-65	3	10
66-74	24	80
75-90	3	10
Total	30	100
Gender		
Male	14	46,7
Female	16	53,3
Total	30	100
Education		
Senior High School	7	23,3
Diploma	7	23,3
Bachelor (S1)	13	43,3
Postgraduate (S2)	2	6,7
Doctoral (S3)	1	3,3

Total	30	100
Occupation		
Government employees	23	76,7
Housewife	3	10
BUMN	4	13,3
Total	30	100
Marital		
Married	21	70
Widow	6	20
Widower	3	10
Total	30	100
Live together status		
Alone	4	13,3
Husband/wife	12	40
Husband/wife and children	8	26,7
Husband/wife and grandchildren	1	3,3
Child	3	10
Children and grandchildren	1	3,3
Relative	1	3,3
Total	30	100
History of diseases		
Heart disease	2	6,7
Dibetes mellitus	1	3,3
Hypertension	5	16,7
Respiratory disorders	1	3,3
No disease	20	66,7
And others	1	3,3
Total	30	100

Source: SPSS data processing (2020)

The results of the mean comparison of the pre and post-intervention values in this study can be explained in Table 2. There is an increase in the average value in each domain. The quality of life of the elderly is in a good category

Table 2. WHOQOL-BREF Mean Value of Pre-Post Intervention

Domain Quality of life	Mean	
	Pretest	Posttest
Physical health	62,47	69,80
Psychological conditions	68,87	73,90
Social Relations	64,20	69,80
Environment	75,47	80,73

Source: SPSS data processing (2020)

The greatest increase in the average value occurred in the physical health domain, which was 7.33. Then followed by the domain of the social relation of 5.6. The third place is occupied by the environmental domain, which is an average increase of 5.26. Meanwhile, the psychological condition domain was the domain that had the least increase in the average, which was 5.03.

The prerequisite test results on each domain were carried out using the Shapiro-Wilk test and it was found that the data were not normally distributed so that the hypothesis testing used the Wilcoxon test with the test calculation criteria if the value of asymptotic significance/asymp.sig (2-tiled) $\rho < 0.05$ then H_0 was rejected and H_a accepted. Based on the results of the hypothesis test, the results showed that in each domain, more positive values were obtained with $\rho < 0.05$ so that H_a was accepted. This also shows that the elderly flexible exercise has a real impact on improving the quality of life of the elderly. Table 3 and Table 4.

Table 3. Results of Pre-Post Intervention on the Wilcoxon Ranks Test

Domain	Pre-Post Intervention		
	Negative	Positive	No Changes
Physical health	2 ^a	25 ^b	3 ^c
Psychological conditions	2 ^a	16 ^b	12 ^c
Social Relations	4 ^a	17 ^b	9 ^c
Environment	3 ^a	20 ^b	7 ^c

a. Post intervention domain < Pre intervention domain

b. Post intervention domain > Pre intervention domain

c. Post intervention domain = Pre intervention domain

Source: SPSS data processing (2020)

The results of the Wilcoxon test on the provision of flexible gymnastic interventions for the elderly in the physical health of the elderly in Makamhaji Village showed that there was an increase in the four domains which were marked by a positive sign. As for these changes, it can be observed in the domain of physical health which is marked by a positive sign in 25 research subjects. Although 2 research subjects experienced a decline and 3 subjects did not experience change, but those that showed an increase were more. In the domain of psychological conditions, 16 research subjects experienced changes with an average value of an increase of 9.56 and a positive ranking number of 153.00. Elderly flexible gymnastics also affect the domain of social relations in the elderly as indicated by a positive value on 17 research subjects where the average increase in value is 11.59 and the number of positive rankings is 197.00. Four subjects experienced negative effects and 9 subjects did not experience changes in value. While in the environmental domain, as many as 20 research subjects showed a positive value with an average increase of 12.53 and an average increase of 250.50. Negative values were obtained on 3 research subjects and as many as 7 research subjects did not experience changes in value.

Table 4. Wilcoxon Ranks Test Results

Domain	n	Pre intervention	Post intervention	p
		Median (minimum-maximum)	Median (minimum-maximum)	
Physical health	30	63,00 (44-81)	69,00 (56-88)	0,000
Psychological conditions	30	69,00 (56-94)	69,00 (56-100)	0,003
Social Relation Environment	30	69,00 (31-81)	75 (44-94)	0,003
	30	75,00 (50-94)	81,00 (63-100)	0,000

Source: SPSS data processing (2020)

The results of the Wilcoxon test on the physical and environmental health domains show the same significance value, which is equal to 0.000 ($p < 0.05$). Thus it can be concluded that there are significant differences in physical conditions and environmental conditions between before and after the intervention. Meanwhile, in the domain of psychological conditions and the domain of social relations, the significance value is the same, which is equal to 0.003. This shows that both psychological conditions and social relationships have significant differences before and after the intervention.

DISCUSSION

Based on the research results, it is known that there are differences in the mean quality of life in each domain where there is an increase in the mean value in each domain. This shows that physical activity greatly affects the quality of life of the elderly in general. The effect of physical activity on the physical health of the elderly based on Table 3 has a positive effect on 25 study subjects with asymp results. Sig 0.000, which means that physical activity influences the physical condition of the elderly. According to Wahyuni (2015), physical activities in the form of fitness and fitness for the elderly can increase the efficiency of the heart's work, flex joints, and maintain body weight so that it can increase fitness and productivity. Based on WHO (2010) states that regular physical activity can improve the body's functional abilities so that it can improve fitness and health in the elderly. This is supported by the results of a study by Jatiningsih (2016) which explains that physical activity such as regular exercise in the elderly can improve physical fitness so that it can indirectly improve heart function, lower blood pressure, and reduce the risk of fat accumulation on blood vessel walls. so that the elasticity is maintained. Gymnastics is suspected to be able to improve the subject's condition to be positive, this is indicated by a fresher physical condition when waking up.

Based on the data in Table 3, there is a positive value on the effect of physical activity on psychological conditions. This shows that physical activity intervention in the form of exercise can affect the psychological condition of the elderly. This condition is reinforced by asym. Sig on the Wilcoxon test with a result of 0.003, which means that there is an effect on the provision of physical activity interventions in the form of flexible exercise for the elderly to improve psychological conditions in the elderly. Based on (Indonesian Ministry of Health, 2019) physical activity is useful for improving psychological well-being, self-confidence, controlling stress, anxiety, and depression for the elderly. Dewi's (2018) research shows that subjects with a high level

of activity are associated with good health conditions and mental health quality. The elderly can be said to have a good quality of life if they show a condition that states the level of satisfaction in the mental, physical, social, comfort, and happiness aspects of their life. Physical activity can improve the quality of life which psychologically can reduce stress levels, increase enthusiasm, increase self-confidence, and reduce levels of anxiety and depression (Saftarina & Rabbaniyah, 2016). The implementation of regular physical activity provides direction for the formation of dynamic elderly health in terms of having the ability to move which can support all activities and creativity to improve the welfare of the elderly.

The social relationship domain shows an asymptotic significance of 0.003 with a positive value on 17 study subjects. This shows that physical activity has a positive effect on improving social relations which affects the quality of life of the elderly. The existence of gymnastics activities allows the elderly to meet again with peers to build interaction and communication after not seeing each other for a long time due to the pandemic. Thus it can be said that there is a significant relationship between social interactions and the quality of life of the elderly. This is supported by research (Samper et al., 2017) which states that the elderly will experience withdrawal from social life and their surroundings, this is what can cause the quality and quantity of social interactions to decrease. With this condition, the elderly often experience a double loss (triple loss) including loss of role, barriers to social contact (restriction of contacts and relationships), and reduced commitment (reduce commitment to social morals and values). Older people with greater social engagement tend to have better and more positive vigor, life satisfaction, adaptability, and mental health. The enthusiasm and satisfaction of the elderly are what cause the quality of life of the elderly to be better. Andesty & Syahrul (2019) state that reduced social interaction in the elderly can lead to a sense of isolation and then isolation and social isolation. This condition, makes the elderly feel lonely and can lead to depression so that this can affect the quality of life of the elderly.

A total of 20 research subjects showed a positive value in the environmental domain. The asymptotic significance value obtained is 0,000, which means that there is an effect on the provision of physical activity interventions on the environmental domain on the quality of life of the elderly. Quality of life is a multidimensional relationship that is influenced by personal and environmental factors, which include intimate relationships, family life, friendship, the world of work, neighbors, the city of residence, settlement, education, health, the standard of living, and conditions in one area. country (Rohmah et al., 2012). Renwick & Brown (2000) states that an individual lives in an environment known as a place to live so that the quality of life is closely related to the environment in which the individual lives. The elderly in this study live in a good, safe, and conducive environment both materially and immaterially so that the quality of life that is reflected is also good (Rohmah et al., 2012).

CONCLUSION

Based on the results of the research conducted, the provision of physical activity interventions in the form of flexible exercise in the elderly has a real impact on improving the quality of life of the elderly. This can be seen from an increase in the median, minimum, and maximum values in the existing domain. Besides that, based on the pre and post-intervention Wilcoxon rank test on each existing domain, it shows an

asymptotic significance value in the domain: physical and environmental conditions of 0.000 and psychological conditions and social relationships of 0.003.

It is hoped that the advice that can be given to the elderly can continue to implement existing programs after the Covid-19 pandemic ends so that the level of health, welfare, and quality of life is maintained.

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