The Correlation Between Physical Activity And Quality Of Life Among The Elderly In North Jakarta

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Abstract.

Indonesia has experienced a significant increase in its elderly population. According to Statistics Indonesia (BPS) in 2024, the number of older adults reached approximately 29 million, representing 12% of the total population. In Koja District, North Jakarta, based on the 2024 Koja Health Center Profile, the elderly population is recorded at 28,020 individuals. This demographic shift poses major challenges in maintaining and improving the quality of life of older adults, which can be promoted through active ageing strategies.This study aimed to analyze the correlation between physical activity and quality of life among the elderly. The research employed a descriptive-analytic design with a quantitative cross-sectional approach. The study population consisted of older adults living in the Koja Health Center working area, with respondents selected using random sampling. A total of 120 participants were included, determined by Slovin's formula. Data collection utilized the WHOQOL-BREF questionnaire to assess quality of life and a modified PASE instrument to measure physical activity.Data analysis was conducted using univariate, bivariate (chi-square test), and multivariate (logistic regression) methods. The findings showed that most elderly participants engaged in moderate levels of physical activity, and their quality of life was categorized as fair to good. A statistically significant correlation was found between physical activity and quality of life (p < 0.05), with moderate physical activity showing the highest odds ratio (OR = 3.600). Moreover, independence level and family support were also significantly associated with quality of life.These findings confirm the essential role of physical activity in supporting elderly well-being. Strengthening community-based interventions, such as the Prolanis program and elderly health posts (posyandu lansia), is recommended to sustain elderly participation in physical activity and improve their overall quality of life.

Keywords: Physical Activity; Quality Of Life and Elderly.

I.   INTRODUCTION

Ageing is a natural biological process characterized by the gradual decline of physical, psychological, and social functions, which often leads to increased vulnerability to chronic diseases and reduced quality of life [1,2]. The World Health Organization (WHO) defines older adults as individuals aged 60 years or above, who are at higher risk of experiencing non-communicable diseases such as hypertension, cardiovascular disorders, and musculoskeletal problems [3,4]. Global demographic projections indicate that the elderly population is steadily increasing, with the number expected to double from 1 billion in 2020 to over 2.1 billion by 2050 [5]. This rapid demographic transition signals the emergence of a "population ageing" era, requiring countries to strengthen health systems, social welfare, and community-based interventions [6,7].In Indonesia, the elderly population has shown a consistent upward trend. Data from Statistics Indonesia reported approximately 29 million older adults in 2024, representing 12% of the national population, with projections reaching 19.9% by 2045 [8,9]. While this demographic change reflects the success of health and development programs, it also presents significant public health and socioeconomic challenges. The Indonesian Welfare Survey in 2023 revealed that 17.2% of older adults experience limitations in daily activities, 24.19% continue to smoke, and nearly half remain engaged in informal employment, highlighting their vulnerability in health, independence, and financial security [10].At the regional level, Koja District, North Jakarta, reported 28,020 older adults in 2024 [11].

The urban density and socioeconomic characteristics of this area present unique challenges for maintaining health and independence among the elderly. Physical activity is one of the most important factors influencing health and well-being in later life. Regular exercise improves cardiovascular function, strengthens muscles, enhances flexibility, and reduces the risk of psychological problems, while lack of physical activity accelerates musculoskeletal decline and increases dependency [12–15].Several studies have demonstrated a significant relationship between physical activity and quality of life among older adults.

Ariyanto et al. [16] found that higher levels of physical activity were associated with better quality of life, while Nurlatifa et al. [17] confirmed a strong correlation among hypertensive elderly. Similar findings were reported by Palit [18] and Martins et al. [19], emphasizing that physical activity promotes functional ability, independence, and social participation. Moreover, family support and independence have also been identified as important determinants of elderly quality of life [20–22].Despite these findings, most studies in Indonesia have focused on rural or semi-urban areas, with limited evidence from densely populated urban communities such as Koja, North Jakarta, where the elderly face different social and demographic challenges. Addressing this research gap, the present study aimed to analyze the correlation between physical activity and quality of life among older adults in the working area of Koja Health Center in 2025.

II. METHODS

This study employed a descriptive-analytic design with a quantitative approach and a cross-sectional framework to analyze the correlation between physical activity and quality of life among older adults [23,24]. The research was conducted in the working area of Koja Health Center, North Jakarta, from April to June 2025. The study population consisted of 28,020 older adults recorded in the 2024 Koja Health Center profile [11]. The sample size was determined using Slovin's formula with a 10% margin of error, yielding 100 participants. To anticipate potential dropouts, an additional 20% was added, resulting in a total of 120 respondents. Participants were selected using a random sampling technique to ensure representativeness.
The inclusion criteria were older adults aged ≥60 years, residing within the Koja Health Center working area, willing to participate, able to communicate, and physically capable of performing daily activities. Exclusion criteria included those with advanced chronic diseases, severe cognitive or psychological impairrments, or incomplete questionnaire responses.

Data collection employed a structured questionnaire comprising demographic characteristics, physical activity, quality of life, family support, and independence level. Quality of life was measured using the World Health Organization Quality of Life–BREF (WHOQOL-BREF) instrument [25], while physical activity was assessed using a modified Physical Activity Scale for the Elderly (PASE) [26]. Both instruments had undergone validity and reliability testing in a pilot study prior to data collection and were deemed feasible for use in the elderly population [27].Data analysis was conducted in three stages. Univariate analysis described the frequency distribution of each variable. Bivariate analysis using the Chi-square test (α = 0.05) examined the correlation between physical activity and quality of life [28]. Variables with p-values <0.25 were subsequently included in multivariate analysis using binary logistic regression to identify the most dominant factors associated with quality of life among older adults [29].

III. RESULTS AND DISCUSSION

This study involved 120 older adults residing in the working area of Koja Health Center, North Jakarta. Most participants were aged between 60–72 years, female, had low educational backgrounds, and were unemployed, consistent with national demographic data showing that the majority of Indonesian older adults are women, with limited education and economic activity [9,10]. The majority of respondents were still independent, physically active, and received family support, factors that are recognized as protective for well-being among the elderly [16,25].

Table 1. 1. Results of Bivariate Analysis
Bivariate Analysis Results of Elderly Characteristics and Quality of Life

Variable	category	Quality of Life				Number		P- value	OR
		Low		High					
		n	%	n	%	n	%		
Age	Usia >72 years	24	60	16	40	40	100	0.005	3.300
	60-72	25	31,3	55	68,8	80	100		
Gender	Male	12	30,8	27	69,2	39	100	0.174	0.529
	Female	37	45,7	44	54,3	81	100		
Education	Low	37	58,7	26	41,3	63	100	0.000	5.337
	High	12	21,1	45	78,9	57	100		

Employment	Unemployed	39	51,3	37	48,7	76	100	0.004	3.584
	Employed	10	22,7	34	77,3	44	100		
	Total	49	40,8	71	59,2	120	100		

Resources : Primary Data (2025)

The analysis revealed that 59.2% of respondents reported a high quality of life, while 40.8% were categorized as having a low quality of life. Increasing age was significantly associated with a higher risk of reduced quality of life, in line with the aging process which involves physiological, psychological, and social decline [1,29]. Previous studies have also reported that older adults above 72 years are more likely to experience low quality of life due to functional limitations and degenerative diseases [32].Education level was another influencing factor, with low education associated with poorer quality of life. Higher education contributes to health literacy, awareness of healthy living, and better access to information, thereby supporting well-being in old age [5,18]. Employment status also showed a significant effect, as unemployed older adults were at higher risk of low quality of life. This finding is consistent with psychosocial theories which highlight the importance of productive activity in maintaining social interaction, self-worth, and preventing isolation [20,21].

Tabel 1.2. The Relationship between Family Support and Quality of Life of the Elderly

Family Support	Quality of Life	Total	p-value	OR
	Low	High	n	%
Less supportive	31	72.1	12	27.9
Supportive	18	23.4	59	76.6
Total	49	40.8	71	59.2

Source: Primary Data (2025)

Family support was also significantly associated with quality of life. Older adults who received strong family support reported higher well-being, consistent with findings that family involvement provides emotional, social, and practical assistance that reduces psychological stress and supports independence [23,30]. Independence in daily living activities also had a significant impact, as independent older adults showed higher quality of life compared to those who were dependent.

Table 1.3. The Relationship between Physical Activity and Quality of Life of the Elderly

Physical Activity	Quality of Life	Total	p-value	OR
	Low	High	n	%
Inactive	38	74.5	13	25.5
Active	11	15.9	58	84.1
Total	49	40.8	71	59.2

The most dominant factor identified in this study was physical activity. Elderly individuals who were physically active demonstrated substantially better quality of life than those who were inactive. This is in line with global evidence indicating that physical activity improves cardiovascular function, muscle strength, balance, mental health, and social engagement [3,6,12]

Table 1.4. The Relationship between the Level of Independence
and the Quality of Life of the Elderly

Level of Independence	Quality of Life	Total	p-value	OR
	Low	%	High	%
Not Independent	24	72.7	9	27.3
Independent	25	28.7	62	71.3
Total	49	40.8	71	59.2

Source: Primary Data (2025)

Independence in daily living activities also had a significant impact, as independent older adults showed higher quality of life compared to those who were dependent. Independence reflects autonomy, self-esteem, and the ability to maintain social participation [15,19].

Table 2. Results of Multivariate Analysis

Logistic Regression Analysis: Changes in Odds Ratio (OR) for Age, Employment, Family Support, Physical Activity, and Independence

Variable	*p*-value	OR Before	OR After
Age	0.055	2.974	3.181
Sex	–	–	–
Education	–	–	–
Employment	0.036	3.534	3.824
Family Support	0.000	9.076	9.611
Physical Activity	0.000	10.982	10.488

Source: Primary Data, 2025

The implications of these findings are essential for communities, health services, and educational institutions. Communities need to increase awareness of the importance of physical activity, family support, and maintaining independence among older adults. Health services, particularly primary health centers, can use these findings to strengthen promotive and preventive programs, such as Prolanis, elderly posyandu, and community-based exercise. Educational institutions may incorporate these findings into gerontology curricula and research, contributing to academic development as well as practical strategies to improve the quality of life of older adults [13,26,35].

IV. CONCLUSION

This study concludes that physical activity is the most dominant factor influencing the quality of life of the elderly, where physically inactive older adults are 15 times more likely to experience a lower quality of life compared to those who are active. Regular engagement in light to moderate physical activities, such as walking, elderly gymnastics, or leisurely cycling for at least 150 minutes per week, plays a crucial role in maintaining and improving their well-being. In the working area of Koja Health Center, the majority of elderly individuals (58.68%) were found to have a good quality of life; however, 40.5% still experienced low quality of life, indicating the need for continuous attention and sustainable interventions. Furthermore, several factors such as age, education level, employment status, family support, physical activity, and level of independence showed statistically significant associations with quality of life, either directly or indirectly. On the other hand, sex did not demonstrate a significant relationship with quality of life, suggesting that intervention strategies to enhance the quality of life among the elderly can be applied equally without gender distinction.

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