

Relationship of Quality of Life with Perceptions of Physical Fitness and Exercise Activity Level in the Elderly

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DOI: <https://doi.org/10.52403/ijshr.20240134>

ABSTRACT

Aim: The quality of life of any individual is influenced by various determinants. No study evaluated the relationship of quality of life with perceptions of physical fitness and exercise activity level in the elderly Indian population, so the present study aimed to find out the relationship of quality of life with perceptions of physical fitness and exercise activity level in the elderly.

Methods: The study had a cross-sectional research design. Eighty-five participants with a mean age of 67 years participated in the study. SF-36 was used to evaluate the quality of life and the Physical Fitness and Exercise Activity of Older Adult's scale was used to evaluate physical activity perceptions. Karl Pearson correlation coefficient was used to assess correlations and a t-test was used to see any gender differences.

Results: Significant but weak to moderate associations were found between the perceived physical fitness, and exercise frequency with the physical functioning component of quality of life in the elderly. The Perceived motivators only mildly affect the social functioning aspect of an

individual's life. The Perceived barriers show moderate correlations with multiple components of the quality of life of an individual.

Conclusion: Elderly people's perception regarding physical fitness and exercise activity level significantly affects their quality of life, especially their physical functioning and exercise frequency.

Keywords: Elderly population, Perceived physical fitness and exercise activity level, Physical activity, Quality of life, SF-36

INTRODUCTION

Quality of life is a multidimensional notion defined conceptually as an individual's perception of his or her position in life within a sociocultural context regarding goals, expectations, standards, and concerns. It is "affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment".^{1,3} The instruments for overall quality of life assessment include the 36-item Short-Form Health Survey (SF-36), SF-12, WHOQOL-BREF, SF-8, and the World Health Organization Quality of Life-

100 (WHOQOL-100). SF-36 is the most commonly used.^{8,10}

Physical fitness is a crucial aspect of health, allowing individuals to perform daily tasks with vigor and alertness, without exhaustion, and with enough energy to pursue leisure activities or handle unexpected situations. World Health Organization (WHO, 2018) defines physical activity as any bodily movements produced by skeletal muscle that require energy expenditure including activities undertaken while working, playing, carrying out household chores, traveling, and engaging in recreational pursuits.^{17,18} Exercise is a sub-category of physical activity, that is planned, structured, and repetitive which aims to improve or maintain one or more components of physical fitness. Any physical activity that is done beyond leisure time or working hours has a health benefit.² Studies have shown that exercise is linked to improved mental health, quality of life, and well-being of individuals (Science news source, The Lancet, 8 August 2018)³. Physical activity is a crucial factor in improving quality of life, according to Puciato et al. (2017). As a result, programs designed to enhance quality of life should prioritize increasing physical activity levels. The research suggests that physical activity is required for healthy aging, contributes to the feeling of good, and increases life expectancy.^{13,14} We already know that physical fitness is linked to an individual's quality of life in the following contexts: general population samples (Laforge et al., 1999; Blacklock et al., 2007); cancer survivors (Courneya et al., 2003; Cheema and Gaul in 2006; Herrero et al., 2006); elderly patients (Chang et al., 2001; Stewart et al., 2003; Uemura and Machida et al., 2003; Antunes et al., 2005, Elavsky et al., 2005). Pucci GCMF et al. (2012) reviewed the relationship between physical activity and quality of life in adults and concluded that there is a positive relationship that varies depending on the domain analyzed.^{9,10} Slawinska T et al. (2013) concluded that physical fitness has a greater

impact on women's self-assessment of quality of life than men. The research findings suggest that physical fitness can be associated with quality of life in an elderly population younger than 65 years.⁸ However, it is unknown how the perceived motivating factors, barriers, exercise frequency, and perception of physical fitness affect the quality of life in the elderly Indian population. The perceptions of older adults are crucial for advanced physiotherapy practice to provide personalized health counseling, devise policies that cater to wellness and fitness needs, and meet the requirements for a good quality of life. Therefore, the study aims to evaluate the perception of physical fitness and exercise activity levels and its relationship with QoL in the Indian elderly population.

MATERIALS AND METHODS

Design: A cross-sectional and correlational design.

Sample: The study sample consisted of 85 participants, aged 60 to 83 years selected with the help of the convenience sample technique from Haryana. Participants were told about the purpose of the study and their consent was sought before the data collection. Those old persons who were unable to fill the questionnaire due to one or other reasons their responses were noted down by field workers/ enumerators.

Instrumentals/tools used.

1. SF36 questionnaire (Ware and Sherbourne, 1992, Hays et al., 1993)
2. Physical Fitness and Exercise Activity of Older Adults scale (Melillo, et al. 1997)

SF-36 questionnaire: The 36-item Short Form Survey (SF-36) is an outcome measure instrument based on the Medical Outcomes Study, which was designed to provide an objective measure of quality of life. The RAND 36-Item Health Survey taps eight health domains: physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to

personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions. It also includes a single item that indicates a perceived change in health. These 36 items, presented here, are identical to the MOS SF-36 described in Ware and Sherbourne (1992). Scoring the RAND 36-Item Health Survey is a two-step process. First, precoded numeric values were recorded using the scoring key. It should be noted that all items are scored, with a higher score indicating a better health state. Furthermore, each item is scored on a scale of 0 to 100, with 0 being the lowest possible score and 100 being the highest possible score. Scores represent a percentage of the maximum possible score. Step 2 involves averaging items on the same scale to generate the 8 scale scores.1,7

Physical Fitness and Exercise Activity of Older Adults' Scale: It is an adoption of Melillo's (1997) physical fitness and exercise scale. The physical fitness subscale reflected the functional independence, holism, and age reference. The exercise frequency subscale reflects the types of physical activities the participant did and the frequency of the subject participating in those identified activities and shows a weak correlation to the quality of life. It consists of 41 items (28 positive and 5 negative). The respondent is required to respond to each statement on a 4-point continuum: i.e., strongly agree, agree, disagree, and strongly disagree. For positive items score ranges from 4 to 1 and for negative items scoring is reversed. A high score on the scale indicates enhanced physical fitness.41 items were categorized into four subscales which are physical fitness, barriers, motivators and exercise frequency.3,14

RESULTS

Out of eighty-five total participants with a mean age of 67.30 years as shown in Table 1. Fifty- six (65.8%) were males and twenty-nine (34.2%) were females who participated in the study. Data was analyzed with the help of Pearson's product-moment method of correlation to find the

relationship among different variables. The statistical technique of t-ratio was also employed to find the difference in the quality of life of the elderly due to perceptions of physical fitness as well as due to gender differences. The correlation coefficient was calculated for the four components of the physical fitness perception scale and eight components of quality of life. For the sample population, significant ($p < 0.05$) but weak correlations were seen between the perceived exercise frequency and physical functioning component of quality of life ($r = 0.379$). Similarly, a significant but weak correlation was observed between the perceived physical fitness and social functioning, ($r = 0.377$). No significant difference was found in the QoL scale and physical fitness scale between males and females. Perceived barriers show moderate and significant correlation ($r = 0.39, 0.405, 0.461, 0.467$ respectively) with emotional, fatigue, and role limitations in emotional and physical health components only.

Table 1: Demographic characteristics

Age (n= 85)	Mean±SD
60- 83 years	67.30±5.58

Table 2: Values of mean, SD and range in quality of life of elderly

life	Quality of		
	Mean	SD	Range
Domains			
Physical functioning	88.94	11.17	65-100
Role limitations due to physical health	65.55	36.15	12-100
Role limitations due to emotional problems	70.89	35.12	13-100
Energy/fatigue	40.76	24.37	5-80
Emotional well-being	47.64	30.10	2-88
Social functioning	69.27	14.55	37-100
Pain	86.82	16.69	32-100
General health	70.93	24.56	30-100

Table 3. Values of mean, SD and range in the physical fitness perceptions of elderly

Variables	Physical fitness		
	Mean	SD	Range
Physical fitness	18.29	3.92	9-33
Barriers	32.46	6.15	18-44
Motivators	22.24	4.21	13-39
Exercise frequency	14.64	3.21	7-22

DISCUSSION

Interventions of physical activity have shown significant improvement in the components of quality of life. The literature also suggests that many factors mediate the effect of physical activity on life satisfaction. Rejeski and colleagues (1998) concluded that observable change in behavior (i.e., perception) is more reliably associated with changes in HRQL (Health related quality of life).⁷ Heiestad H et al. (2020) investigated the self-perception of overall health (SPH) and quality of life (QoL) at the onset and after 3, 6, and 12 months of fitness club membership and concluded that exercise imparts changes in SPH and QOL.¹⁶ The literature regarding the assessment of physical activity on modification of SPH indicated a strong association between insufficient physical activity and lower SPH in adults, especially in older individuals (Lee Y et al. in 2000 & Lera-Lopez F et al. in 2019)^{5,15}. Takata Y et al in 2009 investigated the significant association of QoL with physical measurements in an 85-year-old population.¹¹ General health perceptions (GH), vitality (VT), and social functioning (SF) consisting of both physical and mental components were associated with physical fitness when assessed but in the present study, perceived barriers show a moderately significant correlation with vitality only. General health perceptions and social functioning components of quality of life show a weak but significant correlation with perceived motivators and physical fitness only. Many studies investigated the physical fitness association with quality of life, but to our knowledge, no studies have directly addressed the question of perceptions of the elderly regarding physical fitness and exercise activity level and its relationship with their quality of life.

CONCLUSION

In the elderly population with an average age of 67 years, associations were found between perceptions of physical fitness and exercise activity level with the physical

functioning component of their quality of life. It was also concluded that perceived barriers like fear of falls, poor health, lack of transportation, exertion, low strength, and bad weather affect the quality of life of the elderly. The perceived motivators such as exercising with others or in a scheduled manner didn't show any relationship with quality of life except the social functioning aspect which showed a weak negative relationship with the impact of their physical and emotional problems on social activities. Medical professionals especially physiotherapists should address their perceived barriers to provide them with optimal interventions, to promote health, total well-being, functional independence, and a good quality of life.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: We would like to acknowledge the support of the elderly population for their valuable time and support that made conducting the research work possible.

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

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- How to cite this article: Megha Gakhar, Bhawna Verma, Pooja, Vinay Jagga. Relationship of quality of life with perceptions of physical fitness and exercise activity level in the elderly. *International Journal of Science & Healthcare Research.* 2024; 9(1): 257-261. DOI: <https://doi.org/10.52403/ijshr.20240134>
