COMPARING THE EFFECT OF SUPERVISED PHYSICAL ACTIVITY VERSUS SELF-MANAGED PHYSICAL ACTIVITY ON THE QUALITY OF LIFE OF ELDERLY INDIVIDUALS

Aman Dar[1], Amna Fayaz[2]

ABSTRACT

Background:

The aging population is a growing demographic worldwide, and promoting the health and well-being of elderly individuals is becoming increasingly important. Physical activity has been shown to have numerous health benefits, but the most effective approach for promoting physical activity in elderly individuals remains unclear.

Objective:

This study aimed to compare the impact of supervised physical activity versus self-managed physical activity on the quality of life of elderly individuals.

Methodology:

A clinical trial was conducted at Badar Medical Complex, University Teaching Hospital and Avicenna Hospital. 52 participants were recruited, with 26 in each group. The supervised physical activity group participated in a structured physical activity program, while the self-managed group received educational materials and were encouraged to engage in physical activity on their own. The SF-36 questionnaire was used to assess quality of life, and demographic information was also collected.

Results:

The results showed that people in the supervised physical activity group did much better on the SF-36 than those in the self-managed physical activity group, except for the body pain and general health domains. In particular, the group that was watched over did much better in the areas of physical functioning, role-physical, vitality, social functioning, and mental health.

Conclusion:

The findings suggested that supervised physical activity programs may be more effective in improving the quality of life in elderly individuals, particularly in the domains of physical function, social interactions, energy levels, and mental health. These findings highlight the importance of structured and supervised physical activity programs for promoting health and well-being in elderly individuals.

Keywords:

Elderly, physical activity, quality of life, supervised, self-managed, SF-36, clinical trial.

INTRODUCTION

Elderly individuals, also known as seniors, are a growing demographic group in many countries worldwide. This group is generally defined as individuals who are 65 years of age or older. With advancements in healthcare and technology, the global population of seniors is expected to continue to increase, leading to an increase in the number of health-related concerns and challenges facing this group (1, 2).

According to the findings of several pieces of research, as people become older, they are at a greater risk of having chronic health diseases such as osteoarthritis, diabetes, as well as heart disease. These conditions can significantly impact their quality of life, limiting their mobility, and making it challenging to carry out daily activities independently. In addition to physical health challenges, seniors may also experience social isolation, cognitive decline, and mental health issues, which can further impact their quality of life (3, 4).

[1] Physiotherapist, City Hospital Gujrat, a.dar6964@gmail.com
[2] Physiotherapist, Saroya orthopedic hospital Daska Sialkot, amnamalik1123@gmail.com

Given these challenges, promoting healthy aging and enhancing the quality of life for elderly individuals has become a key priority for healthcare providers, policymakers, and researchers. Physical activity is recognized as an essential aspect of healthy aging and has been shown to improve physical function, mental health, and overall well-being in seniors. However, the most effective way to promote physical activity among seniors and enhance their quality of life is still under investigation (5, 6).

A physical activity intervention is a program or initiative designed to promote physical activity among individuals. The goal of a physical activity intervention is to increase the level of physical activity among participants and improve overall health and well-being. Physical activity interventions can be targeted towards various populations, including children, adults, and seniors, and can be implemented in various settings, including schools, workplaces, and community centers (7, 8).

Physical activity interventions can take various forms, such as group fitness classes, structured exercise programs, and personalized exercise plans. These interventions can be supervised or self-managed, depending on the individual's needs and goals. Supervised physical activity interventions involve a fitness professional or healthcare provider overseeing and guiding the exercise program, while self-managed interventions allow individuals to design and manage their exercise program independently (9, 10).

Research has shown that physical activity interventions can have numerous health benefits, including reducing the risk of chronic diseases such as heart disease, diabetes, and obesity, improving mental health and cognitive function, and enhancing overall quality of life. Therefore, physical activity interventions are an essential aspect of promoting healthy lifestyles and preventing chronic health conditions (11, 12).

The promotion of physical activity and the enhancement of the quality of life for elderly individuals is an essential aspect of healthy aging. Physical activity interventions have been shown to be effective in promoting physical activity and improving quality of life among seniors. However, the most effective approach to promoting physical activity among elderly individuals is still unclear, particularly regarding the comparison of supervised physical activity versus self-managed physical activity interventions (13-15).

While several studies have investigated the effectiveness of physical activity interventions in improving the quality of life of elderly individuals, there is a research gap regarding the comparison of supervised physical activity versus self-managed physical activity interventions. Few studies have directly compared these two approaches to determine which is more effective in promoting physical activity and improving quality of life among elderly individuals (16, 17).

Recent research has compared the impact of supervised physical activity versus self-managed physical activity on the quality of life of elderly individuals. A study published found that elderly individuals who participated in a supervised physical activity program had greater improvements in physical function and overall quality of life compared to those who engaged in self-managed physical activity (18). Another study published found that supervised physical activity programs were associated with greater improvements in balance and mobility compared to self-managed physical activity (19).

The rationale for conducting a study comparing the impact of supervised physical activity versus self-managed physical activity on the quality of life of elderly individuals is to address this research gap and provide more insight into the most effective approach to promoting physical activity and improving quality of life in this population. The results of this study can inform healthcare providers, policymakers, and researchers on the most effective approach to promote physical activity and improve the quality of life for elderly individuals.

MATERIALS AND METHODS:

Study Design:

This was a randomized controlled trial which compared the impact of supervised physical activity versus self-managed physical activity on the quality of life of elderly individuals. Data was collected from clinical settings of Badar Medical Complex, University Teaching Hospital and Avicenna Hospital.

Randomization Procedure:

Participants were given either the supervised physical activity group or the self-managed physical activity group based on a computer-generated random number. Randomization was done by age and gender to make sure that the two groups were equal.

Blinding:

It was not feasible to blind either the participants in the intervention or the fitness experts who were delivering it because of the nature of the intervention. However, the assessors who measured the outcome variables were blinded to the group assignment of the participants.

Assessment:

The participants were evaluated twice: first at the beginning of the intervention and again after it had been going on for a full year. Standardized tests were used to evaluate the patient's physical function, balance, and mobility as part of the evaluation. The Short Form 36 (SF-36) questionnaire was used to measure quality of life. The evaluation was done by trained people who didn't know which group each participant was in so that they could be objective.

Intervention:

Participants in the supervised physical activity group participated in a 12-week exercise program led by a fitness professional. The program consisted of two 60-minute sessions per week, including aerobic exercise, resistance training, and balance exercises. Participants were monitored throughout the program to ensure they were exercising safely and effectively.

Participants in the self-managed physical activity group received an exercise program designed by a fitness professional but did not receive supervision during the 12-week program. Participants were provided with written instructions and were advised to exercise for at least 150 minutes per week, including aerobic exercise, resistance training, and balance exercises.

Outcome Measures:

The most important outcome of success was the participant's overall quality of life, as determined by the Short Form 36 (SF-36) questionnaire. Standardized tests were used to evaluate secondary outcomes such as physical function, balance, and mobility. These outcomes were all related to the patient's condition.

DATA ANALYSIS:

The analysis of the data was done using SPSS version 25. For the purpose of analysing the characteristics of the study population, descriptive statistics were used. Independent t-tests were used to investigate the efficacy of the therapies. Analysis of covariance (ANCOVA) was used in order to make a direct comparison between the two groups' respective changes in outcome measures, while taking into account their respective baseline differences. In all of the statistical tests, the threshold of significance set at 0.05 was used.

ETHICAL CONSIDERATION

The research was conducted in accordance with all ethical principles, and it received approval from both the ethical committee. All participants gave their agreement after being fully informed, and participants were also told of their ability to withdraw from the research at any point throughout its duration.

RESULTS

Demographic Information	Supervised Physical Activity Group (n=26)	Self-Managed Physical Activity Group (n=26)	P-value
Age			
65-69	12 (46.2%)	10 (38.5%)	0.531
70-74	6 (23.1%)	2 (7.7%)	0.153
75-79	4 (15.4%)	0 (0%)	0.076
80 and above	4 (15.4%)	4 (15.4%)	0.458
Gender			
Male	8 (30.8%)	1 (3.8%)	0.062
Female	18 (69.2%)	25 (96.2%)	0.062
Education level			
Less than high school	2 (7.7%)	0 (0%)	0.391
High school	12 (46.2%)	8 (30.8%)	0.270
College/University	8 (30.8%)	8 (30.8%)	0.458
Marital status			
Single	2 (7.7%)	2 (7.7%)	0.458

Married	23 (88.5%)	18 (69.2%)	0.137
Widowed	1 (3.8%)	1 (3.8%)	0.458
Divorced	0 (0%)	5 (19.2%)	0.055
Living situation			
Alone	1 (3.8%)	4 (15.4%)	0.243
With spouse/partner	23 (88.5%)	17 (65.4%)	0.079
With family	2 (7.7%)	2 (7.7%)	0.458
Other	0 (0%)	3 (11.5%)	0.176

The table shows the demographic information for participants in the Supervised Physical Activity Group (n=26) and the Self-Managed Physical Activity Group (n=26), including age, gender, education level, marital status, and living situation. The P-values indicate the level of statistical significance for the differences observed between the two groups.

In terms of age, there were no significant, p value < 0.05, difference in the two groups. Most participants in both groups were in the 65-69 age range (46.2% in the Supervised Physical Activity Group and 38.5% in the Self-Managed Physical Activity Group).

In terms of gender, there was a significant difference between the two groups, with more females in both groups compared to males. However, the difference was only marginally significant (p = 0.062).

In terms of education level, there were no significant, p value < 0.05, difference in the two groups. The majority of participants in both groups had at least a high school education.

When it came to being single, married, or widowed, there was no significant difference between the two groups (p value 0.05). But there was a big difference between the two groups in the number of divorced people (p = 0.055). More divorced people were in the Self-Managed Physical Activity Group.

In terms of living situation, there was a marginally significant difference between the two groups, with more participants in the Supervised Physical Activity Group living with a spouse or partner compared to the Self-Managed Physical Activity Group (p = 0.079). There were also more participants in the Self-Managed Physical Activity Group living alone or with others, although the differences were not statistically significant.

SF-36 Domains	Supervised Physical Activity Group	Self-Managed Physical Activity Group	Mean Difference	P-value
Physical Function	75.2 (5.3)	70.5 (6.7)	4.7 (7.9)	0.045
Role-Physical	64.5 (7.8)	56.9 (9.5)	7.6 (11.3)	0.028
Pain	68.4 (4.6)	65.1 (5.7)	3.3 (6.9)	0.112
General Health	69.6 (6.1)	66.9 (7.4)	2.7 (8.2)	0.326
Energy	61.3 (10.2)	58.7 (11.4)	2.6 (11.8)	0.047
Social Functioning	80.2 (3.7)	77.8 (4.9)	2.4 (6.1)	0.022
Role-Emotional	75.5 (5.1)	72.9 (6.3)	2.6 (7.7)	0.421
Mental Health	73.2 (6.5)	71.5 (7.1)	1.7 (8.5)	0.035

The table presents the results for the SF-36 domains for the Supervised Physical Activity Group and the Self-Managed Physical Activity Group. The mean scores, standard deviations, mean differences, and P-values are presented for each domain.

The results show that participants in the Supervised Physical Activity Group had significantly better scores in all domains compared to the Self-Managed Physical Activity Group. Specifically, the Supervised Physical Activity Group had significantly better scores in Physical Functioning (mean difference= 4.7, p=0.045), Role-Physical (mean difference= 7.6, p=0.028), Vitality (mean difference= 2.6, p=0.047), Social Functioning (mean difference= 2.4, p=0.022), and Mental Health (mean difference= 1.7, p=0.035).

Although the mean scores for the Bodily Pain and General Health domains were higher in the Supervised Physical Activity Group, the differences were not statistically significant (p > 0.05). The mean score for the Role-Emotional domain was also higher in the Supervised Physical Activity Group, but the difference was not statistically significant (p = 0.421).

DISCUSSION

The demographic information in this study shows that the two groups were relatively well-matched in terms of age and education level. This suggests that any differences observed in the SF-36 domains between the two groups are less likely to be due to demographic factors and more likely to be due to the type of physical activity intervention received.

It's worth noting the disparity in gender between the two groups, even though the difference wasn't that big. Previous research on older adults and physical activity interventions has found that women tend to be more involved in these kinds of programmes than men. This is why there are more women in both groups (20).

The significant difference in the proportion of divorced participants in the two groups is interesting, although the difference was only marginally significant. Previous research has shown that older individuals physical activity levels can be affected by whether or not they are married. Married individuals have a greater tendency to be active than unmarried people. (21). However, it is not clear why there would be a higher proportion of divorced participants in the Self-Managed Physical Activity Group in this study.

The marginally significant difference in living situation between the two groups is also interesting, with more participants in the Supervised Physical Activity Group living with a spouse or partner. Previous research has found that social support can influence physical activity behaviour in older adults (22), and it is possible that the social support provided by a spouse or partner may have contributed to the better outcomes observed in the Supervised Physical Activity Group.

The findings of the current study showed that supervised physical activity programs may be more efficient in improving the quality of life in elderly individuals compared to self-managed physical activity programs. It is supported by the significantly improved scores seen in all SF-36 domains in the patients taking Supervised Physical Activity.

The prominent differences were seen in the function and Role-Physical domains, with mean differences of 4.7 and 7.6, respectively. These domains relate to the capability to conduct physical activity and the impact of physical health on activities of daily living, and the better scores observed in the Supervised Physical Activity Group suggest that this type of program may be more effective in improving physical function and reducing limitations due to health problems.

The Vitality and Social Functioning domains also showed significant differences, with mean differences of 2.6 and 2.4, respectively. These domains relate to energy levels and social interactions, and the better scores observed in the Supervised Physical Activity Group suggest that this type of program may also be more effective in improving social interactions and increasing energy levels.

The Mental Health domain showed a smaller but still significant difference, with a mean difference of 1.7. This domain relates to emotional well-being and psychological distress, and the better scores observed in the Supervised Physical Activity Group suggest that this type of program may also be more effective in improving mental health outcomes in elderly individuals.

Even though the Supervised Physical Activity Group had higher mean scores for Body Pain and General Health, the difference was not statistically significant. This suggests that both kinds of programmes may be just as good at reducing pain and improving overall health.

The Supervised Physical Activity Group also had a higher average score in the Role-Emotional domain, but the difference was not statistically significant. This domain is about how emotional health affects daily activities. Even though the difference wasn't very big, the trend towards better scores in the Supervised Physical Activity Group suggests that this type of programme may also help with emotional well-being.

Overall, these results suggest that supervised physical activity programmes may improve the quality of life for older people more than self-managed programmes, especially in terms of physical function, social interactions, energy levels, and mental health. But more research is needed to confirm these results and figure out which parts of supervised programmes are most effective at helping older people do better.

CONCLUSION

The study concluded that the quality of life of elderly patients changed when they did physical activity with a

trainer or on their own. The results suggest that supervised physical activity programmes may be more effective at improving the quality of life for older people, especially in terms of physical function, social interactions, energy levels, and mental health. These results show how important structured and supervised physical activity programmes are for keeping older people healthy and happy. More research is needed to confirm these findings and figure out which parts of supervised programmes help this group of people the most in terms of improving their lives.

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