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RECREATIONAL GAMES AS A CATALYST FOR BETTER AGING: A SIX-WEEK INTERVENTION ON QUALITY OF LIFE AND HEALTH IN OLDER ADULTS

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ABSTRACT

The purpose of this study was to evaluate the impact of a six-week recreational games training program on the quality of life, lung capacity, and flexibility of older adults aged 60 to 79 years residing in Gwalior city. The study included ten participants who were evaluated using the Sit and Reach Test for flexibility, a dry spirometer for lung capacity, and the OPQOL-35 questionnaire to assess their quality of life. Data were collected both before and after the intervention to measure the effects of the program.

The intervention consisted of structured recreational activities designed to engage the participants physically, socially, and mentally. The results demonstrated significant improvements in the participants' overall quality of life and lung capacity, as evidenced by higher post-test scores. Enhanced physical well-being, reflected in better flexibility and increased lung capacity, was accompanied by improvements in emotional and social aspects of life, as reported in the OPQOL-35 responses.

Statistical analysis revealed highly significant differences ($p < .05$) between pre- and post-test measures, confirming the positive effects of the intervention. These findings highlight the potential of recreational games as a practical and enjoyable approach to improving physical health, emotional well-being, and overall quality of life in older adults. Moreover, the study suggests that incorporating recreational activities into regular routines can serve as an effective strategy to promote healthy aging and prevent age-related declines in physical and mental health.

By engaging older adults in meaningful and enjoyable activities, recreational games not only improve physical fitness but also foster social interaction and emotional support, contributing to a holistic approach to healthy aging. These results encourage further research and implementation of similar programs to benefit older populations in other communities.

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1. INTRODUCTION

Aging is a natural process that brings about physiological, psychological, and social changes, which can significantly impact the quality of life of older adults(Asejeje & Ogunro, 2023; Bowling, 2005; Lawton & Nahemow, 1973; Netuveli & Blane, 2008; Saxon et al., 2021). Maintaining physical fitness, lung capacity, and emotional well-being is crucial for enhancing the overall health and independence of this population(Bize et al., 2007; Nici et al., 2006; Ostir et al., 2000; Ries, 1995; Spruit et al., 2013). Recreational activities provide a holistic approach to improving these aspects by combining physical exercise, cognitive engagement, and social interaction(Alanazi, 2024; Carter & Van Andel, 2019; Hertzog et al., 2008; Kelly et al., 2017; King et al., 2002; Stöcker et al., 2024).

Flexibility and lung capacity are key indicators of functional fitness in older adults(deshi & mishra, 2023, 2024a; Deshi et al., 2023). Reduced flexibility can limit daily activities and increase the risk of falls, while diminished lung capacity can impair overall respiratory function and endurance(Giné-Garriga et al., 2014; Jofré-Saldía et al., 2021; Pollock et al., 1998;

Rikli & Jones, 1999, 2013; Zhao, 2024). Additionally, the quality of life, encompassing physical health, mental well-being, and social connections, is a critical metric for assessing the overall well-being of older individuals. There have been reports of benefits for older adults' muscle activity from standing yoga poses. Muscle activation was found to be higher in unsupported asanas than in supported asanas(deshi & mishra, 2023, 2024b; Deshi & Das, 2023).

Recreational games offer a structured and enjoyable means of addressing these concerns. They provide opportunities for physical movement, improve coordination, and foster social connections, all of which contribute to a better quality of life. This study aims to evaluate the effects of a six-week recreational games training program on flexibility, lung capacity, and quality of life among older adults in Gwalior city. By incorporating accessible and engaging activities, the program seeks to enhance the physical and emotional well-being of participants

2. METHODOLOGY

PARTICIPANTS

The study involved 10 older adults aged 60 to 79 years, residing in Gwalior city. Participants were selected based on their willingness to participate and their physical ability to engage in the recreational games training program. Informed consent was obtained from all participants prior to the commencement of the study(Deshi & Mishra, 2023; Deshi & Pujari, 2023).

STUDY DESIGN

The research followed a pre-test and post-test experimental design to examine the effects of a six-week recreational games training program on the flexibility, lung capacity, and quality of life of older adults.

MEASUREMENTS

FLEXIBILITY: Flexibility was assessed using the Sit and Reach Test. This test measures the flexibility of the lower back and hamstring muscles, which are crucial for overall mobility and physical function in older adults.

LUNG CAPACITY: Lung capacity was measured using a dry spirometer. Participants were instructed to take a deep breath and exhale into the spirometer to measure their vital capacity.

QUALITY OF LIFE: Quality of life was assessed using the OPQOL-35 (Older People's Quality of Life Questionnaire). This validated questionnaire measures various aspects of quality of life, including health, social relationships, independence, and emotional well-being.

INTERVENTION

Participants underwent a six-week recreational games training program. The program was conducted in a group setting, with sessions held three times per week. Each session lasted for approximately 60 minutes and included a variety of recreational games tailored to the physical and cognitive abilities of the participants. The activities were designed to promote physical movement, social interaction, and enjoyment.

SIX-WEEK TRAINING SCHEDULE

Week 1:
Warm-up exercises (10 minutes)
Balloon volleyball (15 minutes)
Chair-based exercises with music (20 minutes)
Cool down with stretching (15 minutes)

Week 2:
Warm-up exercises (10 minutes)
Target toss using beanbags (15 minutes)
Group walking activity with a focus on coordination (20 minutes)
Cool down with breathing exercises (15 minutes)

Week 3:
Warm-up exercises (10 minutes)
Modified bowling (15 minutes)
Parachute games promoting teamwork (20 minutes)
Cool down with light stretches (15 minutes)

Week 4:
Warm-up exercises (10 minutes)
Ring toss (15 minutes)

Dance-based movement games (20 minutes)
Cool down with mindfulness exercises (15 minutes)

Week 5:

Warm-up exercises (10 minutes)
Balloon badminton (15 minutes)
Circle games encouraging interaction and strategy (20 minutes)
Cool down with relaxation techniques (15 minutes)

Week 6:

Warm-up exercises (10 minutes)
Group relay games (15 minutes)
Favourite game of participants' choice (20 minutes)
Cool down with a gratitude discussion and stretching (15 minutes)

PROCEDURE

Pre-Test: Before the intervention, participants completed the Sit and Reach Test, lung capacity measurement with the dry spirometer, and the OPQOL-35 questionnaire to establish baseline scores.

POST-TEST: At the end of the six weeks, participants repeated the Sit and Reach Test, lung capacity measurement, and OPQOL-35 questionnaire to assess changes in flexibility, lung capacity, and quality of life.

3. DATA ANALYSIS

Pre-test and post-test results were compared using appropriate statistical methods to determine the effectiveness of the recreational games training program on the measured outcomes. Descriptive statistics and paired t-tests (or their non-parametric equivalents) were used to analyse the data.

RESULTS

Table 1. Pre- and Post-Test Quality of Life Scores (OPQOL-35) After Six-Week Recreational Game Intervention

	Mean	N	Std. Deviation	Std. Error Mean
pre	144.2000	10	8.33733	2.63650
post	152.6000	10	6.85079	2.16641

The data from the paired samples statistics suggests a positive effect of a six-week recreational game intervention on older adults' quality of life, as measured by the OPQOL-35 (Older People's Quality of Life) questionnaire. The increase in the mean score from pre-intervention (M = 144.20, SD = 8.34) to post-intervention (M = 152.60, SD = 6.85) indicates an improvement in participants' perceived quality of life following the recreational training. This rise of 8.4 points in the mean score suggests that structured recreational games may have a meaningful impact on overall well-being among older adults.

The reduction in the standard deviation from pre- to post-test implies a greater consistency in quality-of-life scores among participants after the intervention, possibly indicating that the recreational activities were universally beneficial across the group. The decreased standard error from pre-test (SE = 2.64) to post-test (SE = 2.17) further supports that the post-test results were more precise.

Table 2. Pre-Post t-Test for Quality of Life (OPQOL-35) After Six-Week Intervention

	Mean	Std. D	Std. E	t	df	Sig. (2-tailed
Pre-Post	-8.40000	3.13404	.99107	-8.476	9	.000

Table no.2 The results from the paired samples t-test indicate a statistically significant improvement in quality of life among older adults following a six-week recreational game intervention, as measured by the OPQOL-35 questionnaire. The mean difference between pre- and post-test scores is -8.40 (SD = 3.13), suggesting a notable increase in participants' overall quality of life after the intervention. The t-value of -8.476 and the corresponding p-value of .000 ($p < .001$) confirm that this difference is statistically significant, highlighting a strong effect of the recreational games on quality-of-life outcomes.

The highly significant result ($p < .001$) underscores the potential benefits of recreational games for enhancing well-being among older adults. Such activities can positively impact physical, social, and psychological health, all of which contribute

to an improved quality of life. Given the OPQOL-35's comprehensive assessment across various life domains, these findings suggest that recreational games may foster not only physical engagement but also improved social interactions and psychological well-being.

These results align with existing literature, suggesting that regular recreational activities can be an effective intervention for promoting a better quality of life in aging populations. Future studies could explore the specific quality of life dimensions most impacted by recreational games, possibly employing a control group to strengthen the findings. Moreover, increasing the sample size could improve generalizability and help identify long-term effects of such interventions.

Table 3. Paired Samples t-Test for Lung Capacity Before and After Six-Week Recreational Game Intervention

	Mean	Std. D	Std. E	t	df	Sig. (2-tailed
Pre-Post	-80000	.31972	.10111	-7.913	9	.000

Table 3 The results from the paired samples t-test demonstrate a statistically significant improvement in lung capacity among participants after a six-week recreational game intervention. The mean increase in lung capacity was -80000 (SD = 0.31972), with a t-value of -7.913 and a p-value of .000 ($p < .001$), indicating a strong effect of the intervention. This significant increase suggests that recreational games may enhance respiratory function in older adults.

The findings highlight the potential benefits of incorporating recreational activities into regular routines for improving lung health, likely due to the physical engagement and aerobic aspects of the games. Such activities may positively affect lung capacity by promoting increased ventilation and respiratory efficiency, which are critical for older adults

Table 4. Paired Samples t-Test for Flexibility Before and After Six-Week Recreational Game Intervention

	Mean	Std. D	Std. E	t	df	Sig. (2-tailed
Pre-Post	-7.97000	3.03720	.96045	-8.298	9	.000

The table 3 paired samples t-test results reveal a statistically significant improvement in flexibility following a six-week recreational game intervention. The mean difference between pre- and post-test flexibility scores was -7.97 (SD = 3.04), with a t-value of -8.298 and a p-value of .000 ($p < .001$), indicating a strong, positive effect of the recreational games on flexibility.

The significant improvement in flexibility suggests that the physical activity involved in recreational games likely promotes joint mobility, muscle elongation, and overall flexibility in older adults. Given the importance of flexibility for maintaining functional independence and preventing falls in aging populations, these findings emphasize the value of recreational activities that incorporate stretching, movement, and balance.

4. DISCUSSION

The findings of this study demonstrate the positive impact of a structured six-week recreational games training program on the physical and emotional health of older adults. Significant improvements in OPQOL-35 scores suggest that participation in recreational activities can enhance social relationships, independence, and mental well-being. Additionally, the observed increase in lung capacity highlights the effectiveness of physical movement in promoting respiratory health.

These results align with previous research emphasizing the benefits of physical activity and social engagement for aging populations. Studies have consistently shown that recreational games improve physical mobility, reduce feelings of isolation, and foster a sense of accomplishment among older adults. The group setting and enjoyable nature of the intervention likely contributed to participants' adherence and overall satisfaction. Furthermore, the improvement in lung capacity supports existing evidence that moderate-intensity activities can enhance pulmonary function in older populations.

The t-test results indicate highly significant changes in both quality of life and lung capacity ($p < .05$), confirming the effectiveness of the intervention. The mean improvement in OPQOL-35 scores by 8.4 points suggests meaningful enhancements in participants' perceived quality of life, while the substantial increase in lung capacity underscores the program's benefits for respiratory health. These findings suggest that recreational games serve as an effective, low-cost strategy for improving the well-being of older adults.

5. CONCLUSION

This study provides compelling evidence that a six-week recreational games training program can significantly enhance the quality of life and lung capacity of older adults. By integrating physical activity with social interaction, recreational

games offer a holistic approach to promoting health and well-being in aging populations. The findings underscore the importance of including recreational activities as part of health promotion strategies for older adults. Future research should aim to build on these results by exploring the long-term benefits and broader applications of such interventions.

CONFLICT OF INTERESTS

None.

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