Research Article

Effectiveness of Group Versus Individual Physiotherapy on Psychological Well-Being among Sedentary Older Women: A Comparative Study

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Background: Aging is associated with reduced physical activity, social isolation, and a decline in psychological well-being. Structured physiotherapy interventions such as group and individual therapy may enhance general well-being in elderly populations.

Objective: To evaluate and compare the effects of group and individual physiotherapy interventions on general well-being in community-dwelling elderly women.

Methods: In this randomized comparative study, 30 sedentary women aged 60 to 75 years were allocated to group therapy or individual therapy (n=15 each). Both cohorts underwent an identical multimodal 30-minute exercise protocol three times weekly for four weeks. The primary outcome measure was the 18-item General Well-Being Schedule (GWBS). Pre- and post-intervention differences were analyzed using paired and independent t-tests ($\alpha = 0.05$).

Results: Significant within-group improvements were observed in both cohorts. However, between-group analysis demonstrated no statistically significant difference ($p > 0.05$), but the post mean value difference is greater in group therapy as compared to individual therapy, indicating comparable effectiveness.

Conclusion: Structured physiotherapy interventions improve psychological well-being in elderly women irrespective of delivery format. These findings support scalable community-based rehabilitation strategies for healthy aging.

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Introduction

Population aging has become a global public health priority, as increasing life expectancy is accompanied by a higher prevalence of chronic diseases, functional decline, and psychological challenges among older adults. Physical inactivity and social isolation are two predominant factors negatively affecting overall health and well-being in aging populations. Elderly individuals with low levels of activity are at increased risk of reduced mobility, diminished physical performance, and impaired quality of life.[1] Regular physical activity is widely recognized as a critical lifestyle factor associated with improved physical function, reduced risk of chronic conditions, and enhanced emotional health in older adults.[2-4]

Research indicates that structured exercise interventions can significantly improve both physical and psycho social outcomes in older populations. For example, randomized trials have shown that multi-component exercise programs improve quality of life and reduce symptoms of depression and anxiety in older adults.[5] Additionally, various modalities, including aerobic exercise, resistance training, and balance programs, have been found to enhance components of well-being, such as mobility, strength, and perceived health status.[6-8] Loneliness and social isolation are also significant determinants of well-being, with studies demonstrating that reductions in social connections are associated with poorer mental health and lower life satisfaction.[9] Interventions that combine social engagement with physical activity may hold particular promise in addressing both physical decline and psycho social needs in elderly populations.[10]

Community-based physical activity interventions have been associated with reduced loneliness and improved emotional state among older adults. For instance, a multi-component group intervention

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including exercise and health education significantly reduced loneliness among socially frail older adults compared to control conditions.[11] Similarly, structured group walking activities have been reported to improve psychosocial outcomes and participation in community life.[12] Participation in group exercise has also been linked to enhanced social support and resilience, which mediate the relationship between physical activity and well-being.[13]

In addition to group formats, individualized exercise interventions remain a cornerstone of physiotherapy practice. Individual programs tailored to personal functional limitations and goals have been shown to improve physical performance and reduce body fat in older adults with frailty.[14] Home-based exercise programs are also effective in enhancing functional mobility and quality of life among sedentary elderly individuals.[15] Comparative studies examining group-based and individual exercise interventions suggest that group programs may offer additional psychosocial benefits, such as increased adherence, social interaction, and motivation, which can further enhance well-being outcomes.[16]

Evidence also supports the effectiveness of different exercise modalities in improving health-related quality of life in older adults. An assessor-blinded randomized controlled trial found that aerobic, resistance, and traditional exercise modalities all significantly improved overall quality of life domains in older adults, suggesting that diverse forms of physical activity can positively influence both physical and psychological health.[17] Furthermore, cross-sectional studies indicate the type of exercise influences subjective well-being, sleep quality, and life satisfaction in elderly women.[18]

Despite the well-documented benefits of exercise on physical and mental health, direct comparisons between group therapy versus individual therapy in the context of improving general well-being (including emotional, social, and psychological facets) remain sparse. Some trials indicate that group exercise programs not only improve functional fitness but also foster a sense of belonging and social connectedness, which are critical components of well-being in older populations.[19] Yet, individualized programs tailored to individual needs may offer superior gains in specific physical parameters.[20] Understanding the relative effects of group versus individual physiotherapy interventions on general well-being is crucial for guiding clinical practice and community health strategies aimed at enhancing quality of life among older adults. This study aims to compare the effectiveness of group therapy and individual therapy interventions on general well-being in an elderly population, thereby providing evidence to inform tailored intervention delivery models for successful aging.

Study Design and Participants

A randomized comparative experimental study was conducted among community-dwelling elderly women residing in Ved Nagar and Vidhyapati Nagar, Ujjain. The study aimed to compare the effectiveness of group therapy and individual therapy in improving general well-being.

Inclusion Criteria

- Women aged 60 to 75 years.
- Sedentary lifestyle (less than 150 minutes of physical activity per week).
- Able to walk independently with or without an assistive device.
- Mild–moderate Knee Osteoarthritis (Kellgren–Lawrence Grade I–II)
- Able to understand instructions and complete questionnaires.
- Medically stable and cleared for low-to-moderate exercise.
- Provided written informed consent.

Exclusion Criteria

- Severe Knee Osteoarthritis (Grade III–IV) with major mobility limitation.
- Recent fracture, surgery, or joint replacement (<6 months).
- Neurological disorders, severe cognitive or psychiatric disorders.
- Uncontrolled systemic diseases (cardiac, respiratory, metabolic). 5.
- Individuals who were unable to attend at least 80% of the intervention sessions.

Sample Size and Sampling Method

Participants were recruited using a non-probability convenience sampling technique from community residential areas. The total sample size comprised 30 elderly women, randomly allocated into two equal groups.

Group A (Group Therapy): n = 15, in group therapy, a

total of 6 groups; each group has 5 women.
Group B (Individual Therapy): n = 15
Random allocation was performed using a simple lottery method to minimize selection bias.

Data Collection Instrument

General well-being was assessed using the 18-item General Well-Being Schedule (GWBS) derived from the National Health and Nutrition Examination Survey. The GWBS evaluates six domains: Anxiety, depression, self-control, vitality, positive well-being, and general health. Each item is scored on a Likert-type scale. Higher total scores indicate better psychological well-being. Pre-intervention and post-intervention GWBS scores were recorded for all participants.

Validity and Reliability

The GWBS is a standardized and validated instrument widely used to assess psychological well-being in adult and elderly populations. The scale has demonstrated strong internal consistency (Cronbach's alpha > 0.80) and acceptable construct validity in community-based studies.

Data Collection Procedure

The objectives of the study were explained to all eligible participants. Written informed consent was obtained prior to data collection. Baseline demographic data and pre-intervention GWBS scores were recorded. Participants then underwent the 4-week intervention program. After completion of the intervention period, post-intervention GWBS scores were reassessed. Confidentiality and anonymity of participant information were strictly maintained throughout the study.

Intervention Protocol

Both groups received identical structured physiotherapy interventions; the only difference was the mode of delivery (group-based vs one-to-one). The intervention duration was 4 weeks, conducted three alternate days per week, with each session lasting 30 minutes. Group A (divided into 6 small groups, 5 women in each group performed exercises collectively under supervision, while Group B performed exercises individually under therapist supervision.

Statistical Analysis

Data were analyzed using SPSS Version 21.0. Descriptive statistics (mean and standard deviation) were calculated for demographic variables and GWBS scores. Paired sample t-tests were used to compare pre- and post-intervention scores within each group. Independent sample t-tests were used to compare post-intervention scores between the two groups. Statistical significance was set at $p < 0.05$.

Table 1: Age distribution (N=30)

Variable	*Mean*	*SD*	*Median*
Age (years)	65.00	2.96	65.50

Table 2: Mean age by study groups

Group	*Mean age*	*SD*
Group Therapy	64.53	2.88
Individual Therapy	65.47	3.07

Note: No statistically significant age difference ($p > 0.05$).

Table 3: Pre and post GWBS comparison

Group	*Pre-mean ± SD*	*Post-mean ± SD*	*Mean diff*	*p-value*
Group therapy	67.80 ± 14.21	78.27 ± 9.70	+10.47	<0.05
Individual therapy	63.07 ± 15.53	69.33 ± 15.37	+6.26	<0.05

Table 4: Between-group comparison (Post-Test)

Group	*Mean*	*SD*	*t-value*	*p-value*
Group therapy	78.27	9.70	1.903	0.067
Individual therapy	69.33	15.37		

Table 5: Exercise protocol for groups A & B

S. No.	*Exercise component*	*Description of procedure*	*Repetitions / duration*	*Purpose*
1	Deep slow breathing21	Diaphragmatic breathing in sitting position with slow nasal inhalation and controlled oral exhalation	5 minutes	Improves oxygenation, autonomic balance and reduces anxiety
2	5-Meter walking task22	Walking 5 meters at comfortable speed under supervision	5 repetitions	Enhances gait speed and functional mobility
3	Chair squats23	Sit-to-stand from chair without upper limb support (if tolerated)	10 reps × 2 sets	Strengthens lower limb musculature
4	Balance training24	Tandem stance, weight shifting, and static balance exercises	5 minutes	Improves postural stability and reduces fall risk
5	Heel raises25 (Standing)	Standing with support, raise heels slowly and lower down	10 reps × 2 sets	Improves calf strength and balance
6	Seated knee extension27	Sitting on a chair, extend knee fully and hold 3–5 sec	10 reps each leg, 2 set	Strengthens quadriceps and supports knee joint
7	Relaxation breathing21	Controlled breathing for a cool down	3–5 minutes	Reduces stress and promotes relaxation
8	Group-based delivery	Exercises performed collectively under supervision	—	Promotes social engagement and adherence
9	Individual therapy delivery	One-to-one supervised therapeutic session	—	Provides personalized correction and monitoring

Results

A total of 30 participants completed the study. Both group therapy and individual therapy demonstrated improvement in general well-being scores after 4 weeks of intervention.

The mean pre-intervention GWBS score in the group therapy group was 67.80 ± 14.21, which increased to 78.27 ± 9.70 post-intervention. The individual therapy group showed improvement from 63.07 ± 15.53 to 69.33 ± 15.37. Within-group analysis revealed statistically significant improvement in both groups ($p < 0.05$). However, between-group comparison of post-intervention scores showed no statistically significant difference (t = 1.903, $p = 0.067$).

These findings indicate that both group therapy and individual therapy were effective in improving general well-being, with no significant superiority of one method over the other.

Comparison of GWBS Scores

Both groups showed statistically significant improvement within groups.

Between-group comparison showed no statistically significant difference ($p > 0.05$).

Discussion

The present study aimed to compare the effectiveness of group therapy and individual therapy in improving general well-being among elderly women experiencing social and domestic isolation, along with reduced physical performance. The findings of this study demonstrate that both intervention approaches resulted in improvement in General Well-Being Schedule (GWBS) scores, with no statistically significant difference between the two groups ($p > 0.05$). These findings support the growing body of evidence suggesting that structured physical activity plays a crucial role in promoting physical and psychological health among older adults.[28]

Regular physical activity has been shown to be safe and beneficial for both healthy and frail elderly individuals, contributing to reduced risks of cardiovascular disease, metabolic disorders, obesity, falls, osteoporosis, cognitive decline, and muscular weakness.[29] The structured low-intensity exercise protocol implemented in this study, including walking, sit-to-stand training, balance exercises, and squat sitting, aligns with international recommendations for geriatric rehabilitation.[30] Functional exercises such as sit-to-stand and gait training are well documented to improve lower limb strength, mobility, and independence in activities of daily living.[31]

Deep slow breathing (DSB), incorporated as a core component of the intervention, was hypothesized to reduce perceived anxiety and physiological stress. Controlled breathing techniques have been associated with improved autonomic regulation, reduced sympathetic overactivity, and enhanced parasympathetic

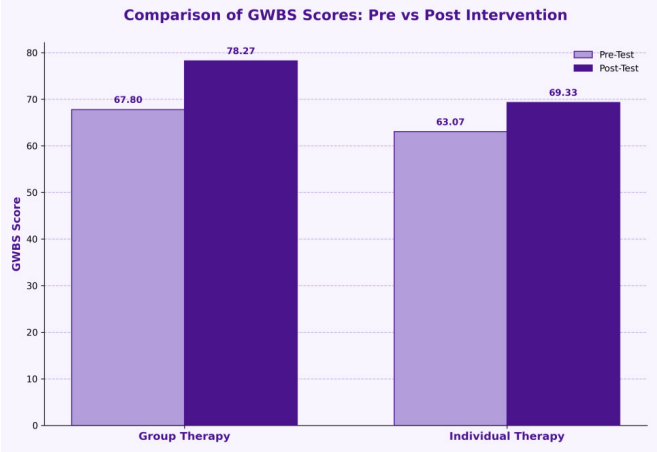

Figure 1 : Pre and post GWBS comparison

response.[32] Previous research indicates that breathing-based interventions may improve emotional regulation, sleep quality, and stress tolerance in elderly populations.[33] From a clinical perspective, breathing exercises can also complement psychological interventions such as Acceptance and Commitment Therapy (ACT), where mindfulness and controlled breathing are used to manage anxiety and pain-related distress.[34]

*Both intervention groups demonstrated significant improvement in psychological well-being following the structured physiotherapy program. The group therapy participants showed a greater mean improvement (10.47 points) compared with the individual therapy group (6.26 points) on the General Well-Being Schedule. Although both approaches were effective, the greater mean change observed in the group therapy participants may be attributed to additional psychosocial benefits such as social interaction, peer support, and increased motivation during group-based exercise sessions.

However, the statistically non-significant difference between the two groups suggests that the overall structure and consistency of the exercise program may be more important than the mode of delivery. Therefore, both group and individual physiotherapy interventions can be effectively implemented depending on available resources, patient preference, and clinical setting.

Statistical analysis using paired t-tests demonstrated improvement within groups; however, independent comparison between groups remained statistically non-significant, leading to acceptance of the null hypothesis. This suggests therapeutic equivalence between structured group and individual physiotherapy programs in improving general well-being among elderly women.

Conclusion

Both group therapy and individual physiotherapy interventions were effective in improving general well-being among elderly women following the structured exercise program. However, group-based exercise programs provide additional psychosocial benefits through social interaction and peer motivation. Therefore, group therapy is considered a beneficial and practical approach for community-based physiotherapy programs aimed at enhancing well-being in older adults.

Future research with larger sample sizes, longer follow-up duration, and inclusion of male participants may further clarify whether social interaction mediates functional improvement. Additionally, incorporating objective physical performance measures may strengthen clinical interpretation.

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