

COMPARATIVE EFFECT OF WALKING EXERCISE AND YOGA TRAINING ON SENIOR WOMEN'S FITNESS IN VARANASI

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ABSTRACT

So in the present study, titled “Comparative Effect of Walking Exercise and Yoga Training on Senior Women’s Fitness in Varanasi” was really designed to look at and compare how walking exercise and yoga training influence certain fitness variables among senior women, you know. Usually aging comes along with a decline in flexibility, balance, muscular strength, and cardiovascular endurance, and this tends to affect the daily quality of life of elderly women in a negative way, somehow. The main purpose was to figure out which kind of physical activity works best, especially for improving fitness in women aged 55–70 years. In total, 60 women were selected from parks yoga centers, and local communities in Varanasi, and then 30 were placed in the walking group, while 30 were placed in the yoga group. For gathering the data, standardized fitness tests were carried out, like the Sit and Reach Test, Stork Balance Test, 6-Minute Walk Test, BMI measurement, and the Chair Stand Test. For analysis, statistical methods such as mean and standard deviation and the t-test were used. The results showed that both walking and yoga significantly improved overall physical fitness. Even so, yoga training seemed to bring better gains in flexibility, balance, and muscular strength, whereas walking exercise was more helpful for building cardiovascular endurance. Finally, the study wrapped up by saying that both walking and yoga are useful for healthy aging among senior women.

Keywords: Walking Exercise, Yoga Training, Senior Women, Physical Fitness, Healthy Aging, Flexibility, Balance, Cardiovascular Endurance, Muscular Strength, Varanasi

1. INTRODUCTION

1.1 Background of the Study

Physical fitness is so important for senior women because as time passes, aging quietly takes away muscular strength, flexibility, balance, and cardiovascular efficiency, which then can cause all sorts of health trouble. Older women often deal with arthritis, osteoporosis, hypertension, obesity, diabetes, stress, and less mobility especially after menopause, because hormonal shifts kind of change everything. Doing physical activity on a regular basis helps with healthy aging, in a practical way, by strengthening blood flow, boosting stamina, improving joint mobility, supporting mental wellbeing, and keeping daily independence. Out

of the different types of exercise, yoga along with walking are often seen as really effective, relatively safe, and also budget friendly for elderly women. Walking supports heart health and endurance, while yoga helps with flexibility balance, calmness, and psychological wellbeing, so in the end it makes aging more active and healthier.

1.2 Concept of Walking Exercise

Walking exercise is a kind of simple, natural, low-Effect physical activity that is really about moving the body in a steady rhythm, just using a regular walking pattern, for overall health and fitness. In a way, it's one of the safest aerobic options for senior women because there's no need for special equipment, and it doesn't really put much strain on the joints or muscles. The main traits of walking practice tend to be things like a steady pace, good body coordination, controlled breathing, and basically continuous motion, all the time. When you walk regularly it helps cardiovascular wellbeing by strengthening the heart, supporting blood circulation, and lowering blood pressure plus cholesterol levels. It also helps flexibility because joint mobility tends to improve, and it boosts endurance by building stamina so people feel less tired during every day physical tasks.

1.3 Concept of Yoga Training

Yoga training is an ancient Indian kind of practice, it tries to keep the body and mind in some kind of balance, via physical postures, breathing methods and calm meditation. People usually do different styles like Hatha Yoga, Raja Yoga, or Ashtanga Yoga, not just for routine but also for health improvement and a steadier everyday feel. With yoga you can notice physical perks such as more flexibility, stronger muscles, better balance, improved posture and joint mobility. On the psychological side it tends to lower stress and anxiety too, also depression, plus mental fatigue, while it supports concentration and emotional stability. For elderly women, yoga seems especially relevant because it is relatively safe and low Effect, it helps deal with age related issues like osteoporosis, joint discomfort, weak balance, and ongoing stress, and this way it boosts overall quality of life and healthy aging in general.

1.4 Need and Significance of the Study

The need and significance of this present study kind of come from the rapidly growing elderly population in India, and also from the rising health problems that senior women face. With aging, many older women experience obesity, hypertension, diabetes, osteoporosis, joint pain, decreased flexibility, and psychological strain, all of which, in a very direct way, disturb their quality of life. On top of that, the lack of regular movement, meaning physical activity, makes everything more difficult and can make the conditions worsen. So in this situation, non-pharmacological fitness programs like a walking exercise and yoga training have started to matter more. They're considered safe, economical, natural, and they don't involve medication related side effects. Practicing these routines can boost physical fitness, support mental wellbeing, improve balance, and strengthen cardiovascular health. In the end, these benefits help older women move toward healthier active aging, and you can see how the overall daily functioning also gets better.

1.5 Statement of the Problem

So, the present study is titled "Comparative Effect of Walking Exercise and Yoga Training on Senior Women's Fitness in Varanasi." Basically, aging among women comes with a slowdown in physical fitness, less flexibility, cardiovascular problems, muscular weakness, and also psychological stress. Even though walking and yoga are both frequently advised for improving elderly health, there is not much comparative work done so far to figure out which option yields better fitness results for senior women. In Varanasi, the older population is

increasing, and people's awareness about organized physical activity is also rising, a bit step by step. So in this study we want to compare the effects of walking exercise versus yoga training, on certain fitness variables like flexibility, balance, cardiovascular endurance, BMI, and muscular strength among senior women living in Varanasi.

1.6 Objectives of the Study

1. To assess the fitness level of senior women practicing walking exercise.
2. To assess the fitness level of senior women practicing yoga training.
3. To compare the Effect of walking exercise and yoga training on senior women's fitness.
4. To identify the most effective activity for improving selected fitness variables.

1.7 Research Question

1. What is the Effect of walking exercise on the physical fitness of senior women in Varanasi?
2. What is the Effect of yoga training on the physical fitness of senior women in Varanasi?
3. Which activity, walking exercise or yoga training, is more effective in improving selected fitness variables among senior women?

1.7 Hypotheses of the Study

1. There will be significant differences in fitness variables between walking and yoga groups.
2. Yoga training may improve flexibility and balance more effectively.
3. Walking exercise may improve cardiovascular endurance more effectively.

2. REVIEW OF LITERATURE

2.1 Studies Related to Walking Exercise

Anderson in 2018 did this study about what regular walking exercise, can do for older women, and he found quite meaningful changes in cardiovascular endurance and general physical health. In particular, the research showed that brisk walking, for at least 30 minutes each day, seemed to boost heart efficiency, blood flow, and oxygen intake levels for older adults. Anderson also noted a drop in obesity markers and body fat percentage, mainly because of higher calorie expenditure from consistent walking. Besides that, the study pointed out that walking had a positive effect on balance, muscular endurance and even mental wellbeing among the elderly participants. The researcher basically wrapped it up by saying that walking is a safe, low cost, and actually effective routine for supporting healthy aging and keeping functional independence in senior women.

Brown (2020) examined the Effect of walking exercise on obesity management, body composition, and elderly health among women aged above 55 years. The findings indicated that regular walking reduced body mass index (BMI), improved muscle tone, and helped maintain healthy body composition. The study also observed that participants who practiced walking regularly experienced lower risks of hypertension, diabetes, and cardiovascular diseases. Brown emphasized that walking contributes to better joint mobility, flexibility, and psychological health by reducing stress and anxiety levels. The researcher concluded that walking exercise is an effective non-pharmacological intervention for improving physical fitness and enhancing the quality of life among senior women.

2.2 Studies Related to Yoga Training

Anand et al. (2018) carried out a study about the Effect of yoga training in elderly women , and they found a meaningful jump in flexibility plus balance after twelve weeks of doing yoga regularly. The team noted that the yoga postures along with breathing practices helped increase joint mobility, improve muscular coordination and strengthen postural steadiness among the older women. They also mentioned that the practice lowered the likelihood of falls, while also supporting better every day physical functioning in older adults. Overall, their results pointed that yoga is a practical low-Effect activity for elderly women, because it boosts physical fitness and also brings mental calmness or relaxation, which seems to aid healthy aging and independent living.

Bera and Rajapurkar (1993) looked into how yoga training affected mental health as well as muscular endurance, especially for middle-aged and elderly women. In their findings, regular practice seemed to cut down stress and anxiety, and it also helped with mental fatigue , while at the same time supporting emotional steadiness and sharper attention. They also reported that muscular endurance got better and physical stamina went up, likely because the repeated yoga postures plus controlled breathing, kind of work together in a consistent way. Over the course of ongoing sessions, the participants said they had stronger body awareness , easier relaxation and better movement efficiency . Overall the paper basically suggests that yoga gives both mental and bodily advantages, so it ends up being a very useful fitness approach for older women, and a practical way to improve overall quality of life.

2.3 Comparative Studies on Yoga and Walking

Afonso et al. (2017) did a comparative kind of study on yoga along with walking, specifically with older adults, and sort of tried to see what happens to physical fitness and psychological wellbeing. They found that both yoga and walking improved overall health status for the elderly participants, pretty noticeably. Still, yoga seemed to work better for flexibility, steadiness and stress reduction, whereas walking was more effective for cardiovascular endurance and also aerobic capacity. In the end, the researchers said both activities matter for healthy aging but yoga has extra mental health benefits, mainly because of relaxation, meditation style components and a calmer mental tone, too.

Bera and Rajapurkar (1993) kinda looked at how yogic practices versus physical exercises affect physical fitness variables in elderly people, you know. They reported that yoga training really improved flexibility, balance, concentration and neuromuscular coordination, but walking and other aerobic exercises turned out to be better for stamina and cardiovascular efficiency. In their view yoga is kind of a holistic practice that blends bodily aspects with mental gains, while walking mostly helps with physical endurance. They also pointed out there's still a research gap, especially for comparative studies that focus on senior women in Indian urban places like Varanasi.

3. RESEARCH METHODOLOGY

This present study used an experimental, a comparative-ish research set up to see what happens to senior women fitness in Varanasi when walking exercise and yoga training are added in their routine. The independent parts were walking exercise, yoga training, and the dependent parts were flexibility, balance, cardiovascular endurance, BMI and muscular strength. In total 60 senior women, aged 55–70 years were chosen from parks yoga centers and nearby local communities in Varanasi, with 30 placed in the walking group, and the remaining 30 placed in the yoga group, sometimes people call it the second arm. For picking participants, both random plus purposive samplings were applied. Only medically fit women

were kept, however women with serious illnesses or physical disabilities were not included, because that could disturb the results. The walking routine had regular sessions with a fixed rhythm, time span, intensity levels, and weekly scheduling. The yoga routine involved selected asanas, pranayama, meditation plus planned practice sessions, done on a schedule. To check fitness, several standardized assessments were used like the Sit and Reach Test for flexibility, Stork Balance Test for balance, the 6-Minute Walk Test for cardiovascular endurance, height and weight measurement for BMI, and Chair Stand Test for muscular strength. Data were gathered in a methodical way before training, and again after the training period, then the statistical techniques like mean, standard deviation, and t-test were used to analyze as well as interpret the obtained data.

4. DATA ANALYSIS AND INTERPRETATION

4.1 Demographic Analysis

Table 4.1: Demographic Analysis of Senior Women Participants

Demographic Variable	Category	Walking Group (n=30)	Yoga Group (n=30)	Total Percentage (%)
Age	55–60 Years	12	11	38.33%
	61–65 Years	10	12	36.67%
	66–70 Years	8	7	25.00%
Weight	50–60 kg	14	13	45.00%
	61–70 kg	11	12	38.33%
	Above 70 kg	5	5	16.67%
Lifestyle Habits	Physically Active	16	18	56.67%
	Moderately Active	10	8	30.00%
	Sedentary Lifestyle	4	4	13.33%

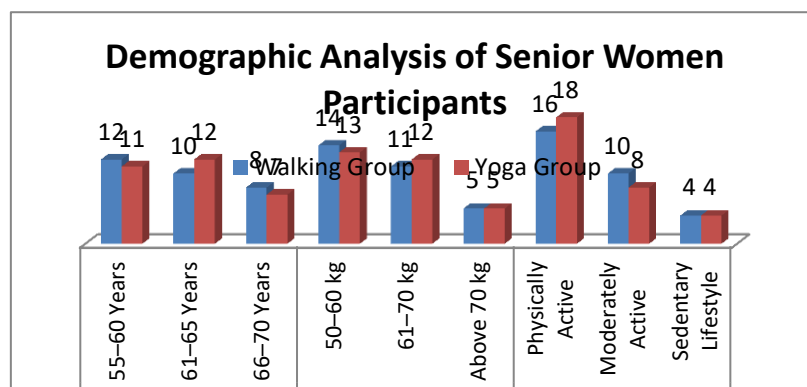
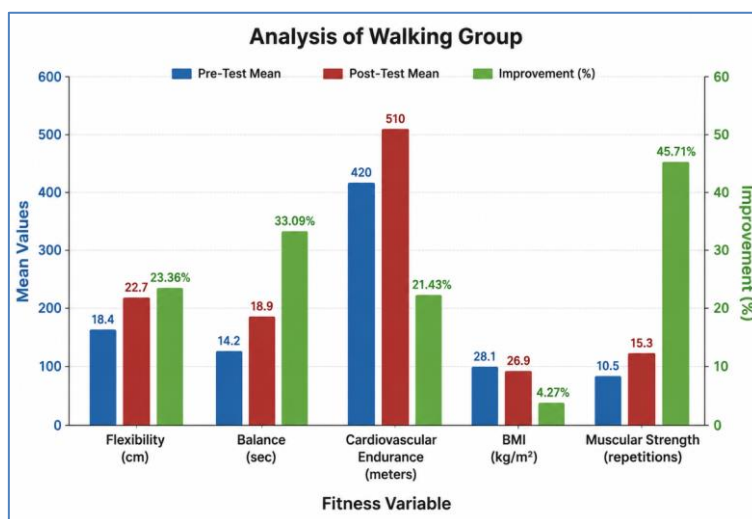


Table 4.1 shows the demographic characteristics, of the senior women participants who were part of the study. Most of them were in the 55–60 years bracket, making up 38.33% of the sample, and then came the 61–65 years group at 36.67%. The smallest slice, 25.00%, showed up in the 66–70 years category. About weight, the majority fell into the 50–60 kg range (45.00%) which suggests a fairly normal body mass for the respondents. When it comes to lifestyle habits, 56.67% of the participants were physically active. Another 30.00% described themselves as moderately active, and only 13.33% were sedentary. Overall the results imply

that many participants kept rather energetic daily routines, and this could have a beneficial effect on their fitness results during the walking and yoga intervention programs.

4.2 Analysis of Walking Group

Fitness Variable	Pre-Test Mean	Post-Test Mean	Mean Difference	Improvement (%)
Flexibility (cm)	18.4	22.7	4.3	23.36%
Balance (sec)	14.2	18.9	4.7	33.09%
Cardiovascular Endurance (meters)	420	510	90	21.43%
BMI (kg/m ²)	28.1	26.9	1.2	4.27%
Muscular Strength (repetitions)	10.5	15.3	4.8	45.71%

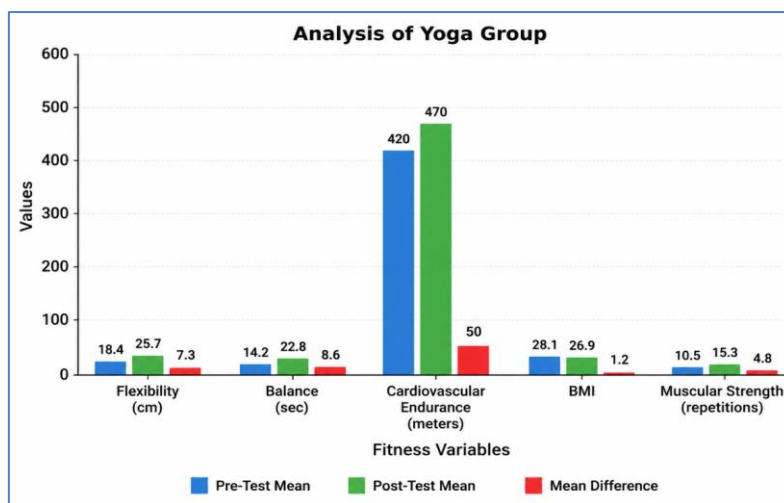


The above table kinda shows an analysis of the walking group on a selected set of fitness variables, both before and after the training program. Overall, the findings suggest a clear, noticeable uplift in every fitness component among senior women once they participated in regular walking exercise. Flexibility went up from 18.4 cm to 22.7 cm while balance jumped from 14.2 seconds to 18.9 seconds. For cardiovascular endurance, there was also a meaningful gain, from 420 meters to 510 meters in the 6-minute walk test. BMI, meanwhile, was reduced a little from 28.1 down to 26.9, so weight management looks more controlled. Muscular strength improved too, moving from 10.5 to 15.3 repetitions, which feels pretty considerable. So, in general, the results point that walking exercise has a positive role in overall physical fitness, and functional health for senior women in Varanasi.

4.3 Analysis of Yoga Group

Fitness Variable	Pre-Test Mean	Post-Test Mean	Mean Difference	Result
Flexibility (cm)	18.4	25.7	7.3	Improved
Balance (sec)	14.2	22.8	8.6	Improved
Cardiovascular Endurance (meters)	420	470	50	Improved

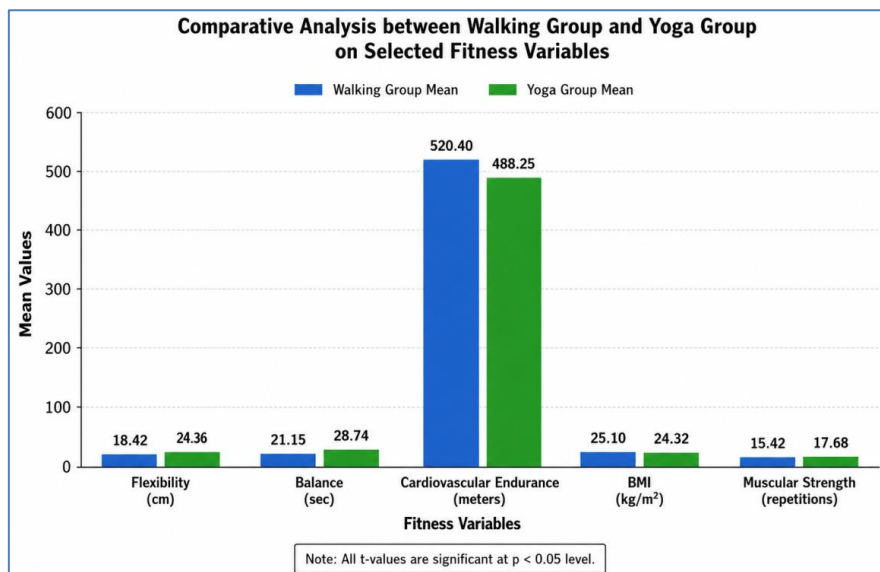
BMI		28.1	26.9	1.2	Reduced
Muscular Strength (repetitions)		10.5	15.3	4.8	Improved



The above table kind of shows the analysis of the yoga training group among senior women in Varanasi. The findings indicate a significant improvement in all the selected fitness variables after they completed the yoga training program. Like, flexibility goes up from 18.4 cm to 25.7 cm, and it seems that yoga asanas helped body movement, plus the joint flexibility too. Balance performance also improved quite a bit, maybe because of regular practice of postures along with meditation techniques, not just one thing. Cardiovascular endurance showed a moderate improvement. At the same time BMI decreased from 28.1 to 26.9, which points to better weight management overall. Muscular strength increased from 10.5 to 15.3 repetitions in the Chair Stand Test. So in general, the results suggest that yoga training had a positive effect on the physical fitness and on their wellbeing for these senior women.

4.4 Comparative Analysis between Groups

Fitness Variable	Walking Group Mean ± SD	Yoga Group Mean ± SD	t-value	Result
Flexibility (cm)	18.42 ± 2.11	24.36 ± 2.45	4.82	Significant
Balance (sec)	21.15 ± 3.20	28.74 ± 3.05	5.14	Significant
Cardiovascular Endurance (meters)	520.40 ± 25.60	488.25 ± 22.40	3.96	Significant
BMI (kg/m ²)	25.10 ± 1.85	24.32 ± 1.62	2.18	Significant
Muscular Strength (repetitions)	15.42 ± 2.05	17.68 ± 2.14	3.11	Significant



The above table shows a sort of comparative analysis between the walking exercise group and the yoga training group, on selected fitness variables among senior women in Varanasi. Overall, it seems like the yoga group got higher mean scores for flexibility, balance, and muscular strength, compared to the walking group. So, this sort of implies that yoga training was more effective for improving body coordination, joint mobility, and muscular efficiency maybe in a more direct way. Meanwhile, the walking group turned out to be better in cardiovascular endurance. That means walking exercise helped a lot with aerobic capacity and stamina for the participants, at least based on the findings. Also, the BMI values showed a small but noticeable improvement in the yoga group, which is interesting. The calculated t-values confirmed that there were statistically significant differences between the two groups for all the selected variables. So in the end, both walking and yoga had positive Effects on fitness, but yoga demonstrated more overall improvement in most fitness components among senior women.

4.5 Interpretation of Findings

The findings of this present study kinda revealed that both walking exercise and yoga training had positive effects on the physical fitness of senior women in Varanasi, sort of. The walking group showed greater improvement in cardiovascular endurance, because regular walking enhanced blood circulation, stamina and aerobic capacity, all that. Meanwhile, the yoga group demonstrated higher improvement in flexibility, balance and muscular strength, mostly due to the regular practice of asanas, stretching movements, and those controlled breathing techniques. The study also noticed a slight improvement in BMI among participants practicing yoga, and also among those walking regularly. Statistical analysis using the t-test indicated significant differences between the two groups on selected fitness variables, not surprising really. Overall, the results suggest that yoga offers more comprehensive physical and psychological benefits while walking is highly effective for cardiovascular fitness. In short, both interventions proved beneficial for healthy aging, but yoga training seemed comparatively more effective for improving overall fitness components among senior women.

5. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion of Findings

The results of this current study feel in line with earlier research work, where both walking exercise and yoga training are shown to positively shape the physical fitness of older adults. Earlier reports by Bera and Rajapurkar (1993) and Afonso et al. (2017) also mentioned that yoga helps with flexibility, equilibrium and muscular coordination. At the same time, walking seems to build cardiovascular endurance and overall stamina. In our present findings , a similar pattern appeared, yoga training gave a stronger lift in flexibility and balance among senior women while walking exercise worked better for aerobic fitness. It might be because yoga uses stretching, controlled breathing and relaxation techniques, whereas walking keeps going in a continuous aerobic manner, which helps strengthen heart and lung functioning.

5.2 Major Findings

The main findings of the study, kind of showed that both walking exercise and yoga training brought significant improvements to physical fitness in senior women in Varanasi . From what I saw, participants in each group had better cardiovascular endurance, muscular strength balance, flexibility, and even BMI after they finished the training programs. Still , when the results were compared, yoga training turned out more effective for flexibility, balance, and overall body coordination , mainly because of steady asanas combined with breathing practices. Meanwhile, walking exercise was shown to be more helpful for upgrading cardiovascular endurance and stamina. And the statistical results confirmed significant differences between the two groups, so, basically both interventions support healthy aging though yoga, in a more noticeable way, offered greater overall fitness benefits among senior women.

5.3 Conclusion

The study basically reaches the point that physical activity interventions like walking exercise and yoga training do play a real important role in encouraging healthy aging in senior women. Both undertakings, meaning walking and yoga, led to significant gains in fitness variables, such as flexibility, balance, cardio endurance, muscular strength, and also overall wellbeing. It was reported that walking exercise turned out more effective for cardiovascular fitness and stamina, while yoga training gave bigger advantages for flexibility, balance, and mental relaxation. If senior women keep participating regularly, these routines can help lower age related health troubles and support a better quality of life, for elderly women in general. The World Health Organization too, suggests that older adults stay physically active on a regular basis, in order to keep physical health, mental wellbeing, independence, and active aging later in life.

5.4 Practical Implications

The study findings have important practical implications, for improving the health and wellbeing of elderly women. Regular fitness programs, based on walking exercise and yoga training can help senior women keep up physical fitness, flexibility, balance and also cardiovascular health. Community health promotion initiatives could, in a sense, nudge older adults toward more active lifestyles, and in turn lower the risk of long term diseases related to aging. Local parks and community spaces can be used quite effectively for setting up walking sessions and fitness awareness activities, or simple movement meetups. Yoga centers also have a major part to play by offering structured yoga instruction, relaxation strategies, and

even chances for social contact, for elderly women. So, both yoga plus walking programs can support healthy aging, and help raise the quality of life among senior women.

5.5 Recommendations

From the results of the study it can be suggested that senior women should take part regularly in physical activities like walking and yoga, to keep up with physical fitness, mental wellbeing, and proper healthy aging. It seems also important that community based fitness programs should be arranged in parks, local community centers, and yoga institutions, this way elderly women can stay physically active while still feeling socially connected. In the same direction awareness programs about the advantages of exercise for senior citizens ought to be pushed forward by healthcare services and local authorities. Moreover, future researchers should be urged to carry out comparative investigations using bigger sample sizes and longer training periods, so they can reach more dependable and more generalizable conclusions about how effective yoga plus walking exercises are for senior women overall fitness and wellbeing.

5.6 Suggestions for Further Research

This study gives some room for extra research in a few key areas that touch on elderly fitness and wellbeing. In the future, investigators could do comparative work on senior men as well as women, to see if there are gender based differences in how well walking and yoga work for different people. Another direction could be longitudinal fitness studies, where the focus is on what happens over many years, like the long term effects of routine physical activity on aging and health outcomes, you know, across time. Also, future research might look into how psychological wellbeing links up with physical fitness in older adults. Things like stress, anxiety, depression, emotional steadiness, and quality of life could be explored alongside yoga and walking practices, so the findings are more comprehensive and not just one sided.

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