

Research

The Effects of Yoga versus Exercise on Stress, Anxiety, and Depression in Older Adults

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Abstract: *The present study investigates the effect of chair Yoga versus walking and chair aerobics on psychological health in older adult men and women. Participants (M age = 83; N = 42) were randomly assigned to one of four activity groups: chair Yoga, chair aerobics, walking, and social games (non-activity control group). Classes met for 30 minutes, 3 days per week, for 6 weeks. ANCOVAs revealed significant time by group interaction for stress frequency; the Yoga group showed the most stress reduction over time. Time by group interactions for the other variables (stress severity, depression, and anxiety) were nonsignificant, although Yoga participants experienced the most benefits over the course of the intervention. Replication with a larger sample size is warranted in order to better understand the impact of Yoga on psychological health in older adults.*

Keywords: *Yoga, anxiety, stress, depression, aerobic exercise, walking, older adults*

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Background

Mental health is a particularly critical issue within the elderly population. Depression is a common psychological impairment in advanced age,^{1,2} and mental health plays a large role in determining both quality of life and physical health. For example, anxiety and depression are important risk factors for pain,³ and it is estimated that 70% to 80% of modern illnesses and 90% of doctor's visits are stress related.^{4,5}

One promising intervention for older adults that targets both mental and physical health is physical exercise. The American College of Sports Medicine guidelines now recommend physical activity for older adults to manage depression and anxiety disorders and improve overall mental health.⁶

Research has verified the beneficial effects of exercise on psychological health and well-being across different popula-

tions,⁷ including the elderly.^{8,9} A meta-analysis of intervention studies concerning physical activity and psychological well-being in advanced age revealed that exercise does have a small but significant effect in older adults without clinical disorders.¹⁰ Regular physical activity is associated with reduced symptoms of anxiety and depression^{11,12,13} and perceived stress.¹⁴

These benefits are particularly relevant for the reduction of mild to moderate depression.¹⁵ In one Finnish study, physically active individuals and lifelong exercisers over

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age 65 reported fewer depressive symptoms than sedentary individuals over an eight-year period.¹⁶ Likewise, Krause, Goldenhar, Liang, Jay, et al.¹⁷ surveyed 2,200 adults over age 60 in Japan and reported that those who exercised frequently had lower levels of stress and psychological distress than nonexercisers. King, Taylor, and Haskell¹⁸ stated that exercise significantly reduced stress in older adults, especially in those who had smoking habits, regardless of changes in fitness or body weight.

Researchers have also identified the potential benefits of mindful exercise (Tai Chi and Qigong) in older adults. A single session of mindful exercise has been demonstrated to have immediate effects on well-being, increasing one's sense of tranquility¹⁹ and reducing depressive mood and state anxiety.²² Research also shows longer-term benefits. Tsang, Mok, Yeung, and Chan²⁰ demonstrated that elderly adults with chronic physical illnesses (mean age = 72.9 years) showed perceived improvement in physical health, psychological health, social relationships, and health in general (as reflected by scores on the Perceived Benefits Questionnaire and informal feedback) after 12 weeks of Qigong practice. Another study²¹ showed similar results in a Tai Chi intervention in which 98 individuals (mean age = 73.2 years) either participated in a Tai Chi exercise class or continued their daily routine activities for six months. At post-test, the Tai Chi participants had higher levels of health perceptions, life satisfaction, positive affect, and well-being and lower levels of depression, negative affect, and psychological distress.

Yoga is another form of mindful physical exercise that may benefit mental health. Yoga and meditation interventions have been shown to improve psychological well-being²² and decrease anger,²³ anxiety,²⁴ and depression.^{25,26} Although a few previous studies have investigated Yoga's impact on older adults,^{27,28} these have utilized small samples with qualitative and anecdotal descriptions of effects. Additional research is needed to investigate the potential impact of Yoga on psychological health in older adults.

The Present Study

The primary purpose of this research was to compare the effects of Yoga versus other forms of physical exercise (walking and chair exercise) on stress, anxiety, and depression in a sample of older adults. A games group served as a nonexercise control group, providing social interaction with other residents and the instructor/researcher. It was hypothesized that all exercise groups would receive greater benefits than the control group and that the Yoga intervention would provide greater benefits than the other forms of exercise.

Method

Human Subjects Committee approval was obtained, and participants were recruited from a senior living facility in a southeastern U.S. city. Participants were randomly assigned to one of four interventions: a chair Yoga class (group fitness intervention), a chair aerobics class (group fitness intervention), a walking program (individual fitness intervention), and a game-playing group (nonexercise control), which allowed participants to experience the social aspect of the intervention without the exercise component. Pre-intervention, participants completed consent forms, the demographic survey, the medical history form, and all measures of stress, anxiety, and depression. Measurements of psychological well-being were completed at the end of each week of the study.

Participants

Enrollment was open to all members of the living community. Forty-five elderly individuals (ages 74 to 92; $M = 83.14$, $SD = 4.84$) enrolled in the study. Participants were predominantly female ($n = 39$), retired ($n = 39$), and widowed ($n = 36$). All individuals resided in the same facility, which served to control for extraneous variables concerning location and living conditions. Participant demographic information is presented in Table 1. Participants were, for the most part, physically active, with 37 (88.10%) of them indicating that they exercised regularly, on average 4.25 days per week for 25.66 minutes.

Factor	Category	f	%
Gender	Females	39	92.90
	Males	3	7.10
Marital Status	Married	4	9.50
	Divorced	2	4.80
	Widowed	36	85.70
Occupational Status	Part-time Work	1	2.40
	Retired	39	92.90
	Never Worked	2	4.80

Table 1. Participant demographics ($N = 42$)

Interventions

Four interventions were established: a chair Yoga class (group fitness intervention), a chair aerobics class (group fitness intervention), a walking program (individual fitness intervention), and a game-playing group (nonexercise control). Table 2 presents characteristics of the assigned interventions. Each intervention and the control group included three 30-minute sessions per week for six weeks. Although each exercise session lasted 30 minutes, participants were encouraged and reminded to rest as needed during each exercise session.

Participants were randomly assigned to one of the four groups, and groups were identified by the day and time of participation rather than by the assigned activity (a completely blind condition was impossible, as the individuals had some idea of what they were doing, although they were not aware of what the other groups were doing). Participants were briefed on the importance of attending all exercise sessions. Participants were also asked not to discuss the intervention with each other, in order to prevent the effects of social influence.

Because groups were small, the instructor introduced herself to each participant at the start of Session 1, and thereafter took attendance at the beginning and end of each session. To accommodate both physically fit and physically unfit individuals, the sessions were adaptable to the individual's ability level. Chairs were provided in the walking area to facilitate resting for the walking program participants. In the chair Yoga and chair aerobics classes, modifications of exercises were offered to accommodate all class members.

Chair Yoga Program

The Yoga intervention was a modification of a traditional Hatha Yoga class. The instructor/researcher, who had 10 years experience of teaching Yoga and 5 years experience of teaching chair Yoga at the time of the intervention, developed a chair Yoga program^{29,30} that met the American College of Sports Medicine guidelines for senior citizen fitness.⁶ The Yoga classes focused on strength and balance activities and provided a predominantly seated exercise program, although some standing balance exercises were performed, using the chair back for stability. Each session began and ended with two to three minutes of meditation and breathing exercises (*pranayama*). A sample chair Yoga class lesson plan, including illustrative photos of postures, is provided in Appendix 1.

Chair Aerobics Program

Each chair aerobics session began with a five-minute warm-up and ended with a five-minute cool-down. The middle 20-minute portion of each class focused on gentle, moderate aerobic activity in the style of group fitness "Sit and Be Fit" or "Senior Seated Aerobics" classes. Each session alternated standing dance activities (such as the Charleston, the cha-cha, and grapevines) with seated work (such as seated leg lifts and upper body activity). All standing activity was done near the chair so that support for balance was available, if necessary. Throughout the session, individuals were reminded that it was acceptable to rest as needed.

Walking Program

The walking program was an individual exercise program with instructor guidance and support. Individuals as-

	Chair Yoga	Chair Exercise	Walking	Games
<i>n</i>	11	11	10	10
Frequency	3 / week	3 / week	3 / week	3 / week
Description	Modified Hatha Yoga with stretching, balance, breathing, and meditation exercises	Chair-based exercise including strength, stretching, and gentle cardiovascular exercise	Individually paced walking with instructor support	Control group with participation in card and board games
Dose	30 min	30 min	30 min	30 min
Duration	6 weeks	6 weeks	6 weeks	6 weeks

Table 2. *Intervention Characteristics*

signed to the walking program intervention were provided with a specific route. Chairs were available along the route for resting. Both indoor and outdoor walking paths were available, to prevent weather conditions from interfering with the walking program. Participants were encouraged to walk for as much of each 30-minute session as possible, but to rest as needed. At each session, the instructor provided guidance about that day's walking assignment. The instructor also provided guidance about proper walking shoes and other equipment, walking form, and offered motivation and encouragement to the walking participants.

Game-Playing Group

The game-playing intervention was selected as a control activity that allowed social interaction without physical activity. Various games (such as dominoes, Chinese checkers, Scrabble, and Rummy Cube) were introduced to the participants in the control group. The instructor facilitated and participated in each 30-minute session. This control was intended to isolate the benefits of exercise in comparison to the benefits of social interaction inherent in group fitness activities, by providing a social interaction venue that did not include exercise.

Instructor

The primary researcher taught the chair Yoga and chair aerobics classes and also directed the walking program and game-playing group. The primary researcher is a Yoga instructor registered with Yoga Alliance at the 200-hour level. At the time of the intervention, she had over 15 years of Yoga experience and 10 years of Yoga teaching experience, including 5 years experience teaching Yoga to older adults. In addition, the primary researcher had equivalent experience in teaching older adult group fitness classes, with personal trainer, group fitness, and senior fitness certifications from the Aerobics and Fitness Association of America and the International Fitness Professional Associations. The primary researcher had no previous affiliation with the senior living facility and conducted this study as an unfunded master's thesis project.

Measures

Participants completed a medical history form, a demographic questionnaire, the Hassles Scale³¹ (revised by Gill³²), the State-Trait Anxiety Inventory (*STAI*³³), and the Beck Depression Inventory-II (*BDI-II*³⁴).

The revised Hassles Scale contains 95 items that describe potentially stressful interactions with the environment and includes such items as "inconsiderate smokers," "auto main-

tenance," "preparing meals," "shopping," and "financial dealings with friends or acquaintances." Participants were asked to rate each event on a scale of 0–3, "not a hassle," "somewhat a hassle," "a moderate hassle," or "a major hassle," based on experiences over the past month. The Hassles Scale is used to calculate two scores. A frequency score is the number of events the individual indicated as a hassle (regardless of how much of a hassle the item is determined to be). This score reflects how many things bothered the individual over the past month (possible range = 0–95). The intensity score is the mean severity reported by the respondent for all hassles reported (range = 0–3). The lower the scores, the lower the frequency and intensity of stress.

Only the 20-item A-State scale of the STAI was utilized, due to the short duration of the intervention. The A-State scale includes 20 items that direct the individual "to indicate how you feel right now, that is, at this moment," with regard to both nonanxious statements such as "I feel calm" and anxious statements such as "I am worried." Items are scored on a scale of 1 (not at all) to 4 (very much so). To score, the nonanxious statements are reverse scored and then all answers are summed (range = 20–80).

The BDI-II is a 21-item self-report scale. For each item, test takers are instructed to "pick out the one statement in each group which best describes the way you have been feeling the past week, including today." The instructions also indicate that individuals are allowed to select multiple responses per item if they seem to "apply equally well." Items increase in severity from 0 to 3 (for example, 0 "I do not feel sad," 1 "I feel sad," 2 "I am sad all the time and I can't snap out of it," and 3 "I am so sad or unhappy I can't stand it"). The BDI-II score is the sum of all answers (range 0–63). A score of 14–19 indicates mild depression; 20–28 indicates moderate depression; scores above 29 indicate severe depression.

A protocol was established to make mental health referrals if any pretest data indicated severe depression, clinical anxiety, or suicidal ideation. However, none of the interested individuals was identified as at risk.

Results

Attrition

Forty-five individuals began the study, and 42 participants completed their assigned intervention. No post-test information was available on individuals who did not complete the study because one was moved by her family to a full-service nursing home and two were transferred to the hospital due to recurring medical conditions. Pre-test infor-

mation for noncompleting individuals was excluded from analysis. All individuals who remained in the facility completed the six-week program.

Preliminary Analysis

Equality of groups at baseline. Analyses were conducted to test whether randomization resulted in equality of means across groups at baseline. A multivariate analysis of variance (MANOVA) of pre-test scores for stress frequency, stress severity, anxiety, and depression measures at baseline indicated equality of groups at pre-test. Skewness and kurtosis was within the range of (-2) to 2, with the one exception of the mean pre-test BDI score of the walking group (kurtosis = 2.63). Box's Test of Equality of Covariance Matrices indicated that the observed covariance matrices of the dependent variables were equal across groups, Box's $M = 38.833$, $F(30, 3893.37) = 1.04$, $p = .41$. Additionally, Levene's test of equality of variances showed nonsignificant ($p > .05$) differences among the four groups' variances on each of the four pre-test measures, indicating that variances were equal. Therefore, the data appear to meet the assumptions for multivariate analysis. Overall, Wilk's $\lambda = .76$, $F(12, 92.89) = 0.85$, $p = .60$, indicated nonsignificant differences among groups at pretest on the four variables. Thus, randomization resulted in equality of means across groups at baseline.

Group	<i>n</i>	M	SD
Yoga	11	14.09	3.18
Aerobics	11	12.91	2.07
Walking	10	11.20	3.12
Games	10	9.90	3.78

Table 3. Attendance rates across groups.

Attendance. To assess the impact of attendance on outcomes, the relationship between attendance rate and group assignment was estimated with an analysis of variance (ANOVA). Means and SDs for attendance (sessions) are presented in Table 3. The ANOVA resulted in statistically significant differences, $F(3, 38) = 3.77$, $p = .02$. LSD post-hoc contrasts indicated that significant ($p < .05$) differences were noted between the Yoga and walking groups; the Yoga and games groups; and the aerobics and games groups. The games group attended fewer sessions than the aerobics group by an average of 3.01 days (out of 18 class days total) and less than the Yoga group by an average of 4.20 days.

Variable	<i>n</i>	Pretest		Posttest	
		M	SD	M	SD
Stress Frequency					
Yoga	11	27.45	18.05	9.73	7.62
Aerobics	11	19.00	12.48	13.09	11.09
Walking	10	24.00	12.41	17.20	12.48
Games	10	24.70	17.64	27.70	18.58
Overall	42	23.76	15.15	16.67	14.15
Stress Severity					
Yoga	11	1.38	0.37	1.35	0.32
Aerobics	11	1.88	0.64	1.65	0.56
Walking	10	1.37	0.31	1.39	0.30
Games	10	1.56	0.42	1.64	0.37
Overall	42	1.55	0.49	1.51	0.42
State Anxiety					
Yoga	11	35.64	8.82	26.36	8.59
Aerobics	11	29.73	8.78	29.00	6.72
Walking	10	33.10	8.94	32.50	7.49
Games	10	35.80	9.68	36.70	9.62
Overall	42	33.52	9.07	30.98	8.77
Depression					
Yoga	11	8.64	4.41	2.82	3.28
Aerobics	11	6.55	3.42	5.00	2.97
Walking	10	8.20	4.69	6.40	5.32
Games	10	8.60	5.04	8.50	5.50
Overall	42	7.98	4.33	5.60	4.69

Table 4. Pre- and post-intervention descriptive statistics for each dependent variable in the four groups.

Additionally, the walking group attended fewer sessions than the Yoga group by an average of 2.89 days. All other attendance differences were nonsignificant.

Intervention Effects on Stress, Anxiety, and Depression

Pre- and post-intervention descriptive statistics for each dependent variable are presented by group in Table 4. As shown, all of the exercise groups, including the Yoga group, showed a decrease in mean stress frequency and depression from the beginning to the end of the intervention. Only the Yoga and aerobics groups showed a decrease in mean stress severity, and only the Yoga group showed a decrease in mean anxiety. The games control group showed an insignificant increase in stress frequency, stress severity, and anxiety and an insignificant decrease in depression.

A Repeated Measures Multivariate Analysis of Covariance (RM-MANCOVA) tested the significance of the overall impact of the intervention, and Repeated Measures Analysis of Covariance (RM-ANCOVA) tested the specific outcome for each dependent variable (stress

severity, stress frequency, anxiety, and depression). Time (including the six weekly data points) was the within repeated factor, while intervention condition was the between-subjects factor. Pre-test scores, pre-intervention exercise levels, and attendance levels during the intervention were used as covariates to control for their effects on outcomes. The overall impact of the intervention was statistically significant, $\lambda = .60$, $F(60,615) = 1.45$, $p = .05$. The results of the RM-ANCOVA for the four variables are presented in Table 5.

The time by group effect for stress frequency was statistically significant, $\lambda = .52$, $F(15, 86) = 1.55$, $p = .05$, as presented in Figure 1. The greatest reduction in stress frequency occurred for the Yoga group. Stress frequency in this group was reduced by 66.12%. The least change occurred for the games group, which increased in stress frequency by 12.15%. The aerobics group and the walking group decreased stress frequency by 31.11% and 28.33% respectively. However, because of the small sample size, the only statistically significant post-hoc comparison for this contrast was between the Yoga group and the games group.

While similar patterns of change occurred for stress severity, anxiety, and depression, with Yoga group participants experiencing more benefits than participants of the other three groups, these effects failed to achieve statistical significance. Results are presented in Table 5 and nonsignificant interaction effects are depicted in Figures 2-4.

Discussion

The present study investigated the impact of a six-week chair Yoga intervention in comparison to chair aerobics, walking, and games groups on the psychological health of senior citizens. Although significant results were limited, the chair Yoga group showed greater benefits than did the chair exercise or walking groups. It is proposed that in a population of already active older adults, Yoga provides additional mental health benefits above and beyond aerobics and walking.

Traditional Yoga philosophy, as well as research on other forms of mindful exercise, point to one potential reason

Variable	Effect	Wilks's λ	F	df	p	η^2
Stress Frequency						
	Time	.83	1.28	5, 31	.29	.17
	Group		1.56	3, 35	.21	.12
	Time by group*	.52	1.55	15, 86	.05	.19
Stress Severity						
	Time	.74	2.17	5, 31	.08	.26
	Group		2.49	3, 35	.07	.18
	Time by group	.67	0.90	15, 86	.56	.13
State Anxiety						
	Time	.94	.43	5, 31	.82	.06
	Group*		2.73	3, 35	.05	.19
	Time by group	.70	0.79	15, 86	.68	.11
Depression						
	Time	.96	.256	5, 31	.93	.04
	Group		2.18	3, 35	.10	.16
	Time by group	.58	1.24	15, 86	.26	.17

* Significant Results, $p = 0.05$

Table 5. ANCOVA results for the four dependent variables.

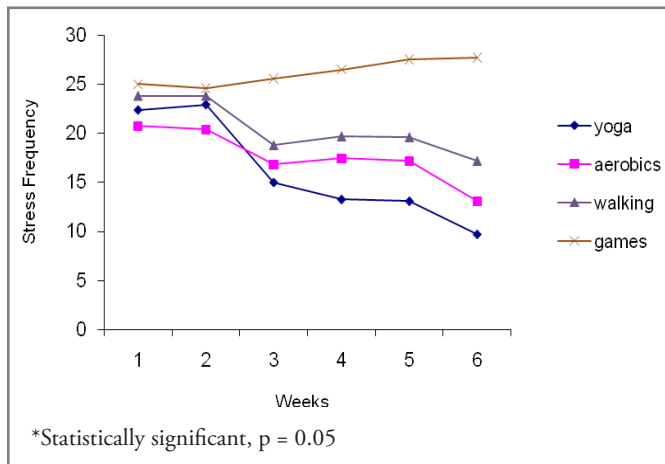


Figure 1. Stress frequency* throughout the six weeks for each of the four studied groups.

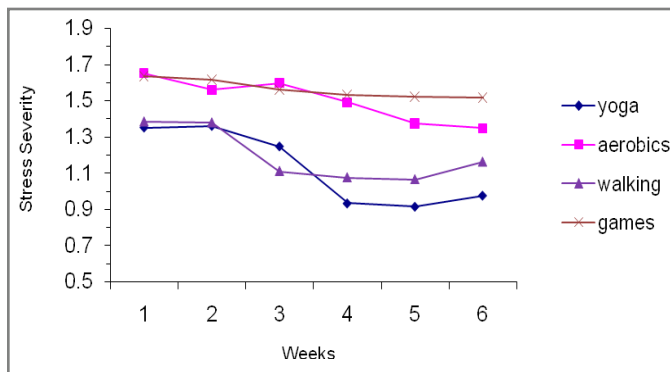


Figure 2. Stress severity throughout the six weeks for each of the four studied groups.

Yoga may provide additional mental health benefits: the inclusion of mindfulness, the practice of complete present-moment awareness.³⁵ Yoga class members are encouraged to focus on breathing techniques as they exercise, rather than allowing the mind to wander. Inherent in present-moment awareness is acceptance of things as they are (i.e., acceptance of the present, rather than craving for change in the future). For older adults facing physical health impairments, loss of independence, the death of loved ones, and their own impending death, this acceptance might be a profound tool for increasing psychological well-being.³⁶ If the older adult can accept his or her current situation and enjoy the present moment, without fear or anxiety about tomorrow, he or she can perhaps experience less stress, anxiety, and depression. Yoga may facilitate this sense of acceptance and therefore increase psychological well-being in older adults.

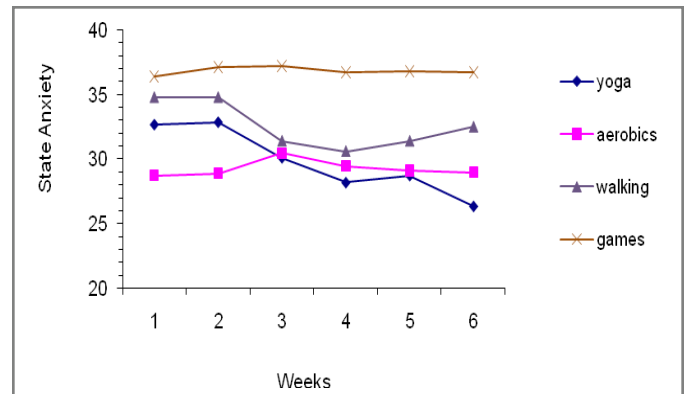


Figure 3. State anxiety throughout the six weeks for each of the four studied groups.

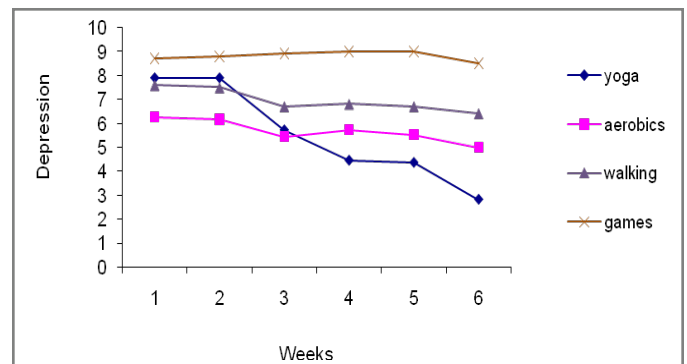


Figure 4. Depression throughout the six weeks for each of the four studied groups.

Limitations

Attendance differences between groups. The significant difference in attendance between groups is potentially problematic, because it is possible that observed differences were due to group differences in attendance, rather than intervention characteristics. It is also possible that the characteristics of each activity affected the participant's motivation to adhere to the program. Because the participants indicated regular physical activity prior to the intervention, and because Yoga was a novel offering at the senior facility, this may have increased participants' motivation to regularly attend.

Sample characteristics. The sample was predominantly female, widowed, and retired, which may limit the generalizability of outcomes to other populations of older adults. The study's sample size also limited the ability to detect significant improvements. Although the Yoga group did improve on all four measures of psychological well-being used in the study, the present

sample was too small for the observed effects to achieve statistical significance.

Another potentially limiting characteristic of the sample was the level of pre-intervention physical activity. At pre-test, 37 participants (88.10%) indicated they were engaged in some physical activity. Previous meta-analysis⁴ revealed larger effects for sedentary, as compared to nonsedentary, individuals, in fixed-effect tests (0.35 versus 0.17). Although Yoga is proposed to be inherently different from less mindful forms of exercise, the pre-intervention exercise practices of the sample may have created a ceiling effect for the benefits of less mindful physical exercise, reducing the potential for change in the aerobics and walking groups.

Instructor characteristics. One possible concern is that instructor characteristics—specifically, her extensive Yoga experience—may have been partially responsible for the increased effectiveness of Yoga in improving psychological health in class members. However, the instructor also had comparable experience and training in the general fitness industry. Additionally, the instructor made a strong effort to treat all groups and all individual participants equally, and spent an equal amount of time interacting with each group. However, instructor characteristics and the potential for unconscious bias could have impacted results, and a larger scale study with multiple instructors is warranted.

Future Directions and Conclusions

The results of this study support the idea that mindfulness-based exercise, including Yoga, may have mental health benefits above and beyond other forms of physical activity that do not have a mindfulness component. The results indicate several future research directions. First, replication with a larger sample size is warranted. Future research should investigate both the benefits of Yoga and the mechanisms underlying Yoga's effects. Second, attendance rates were significantly different among groups, and Yoga was more popular than both walking and games. A further investigation into why Yoga was more popular may provide insight into the factors that encourage exercise motivation and adherence, and therefore provide exercise benefits, among the elderly. As well, future studies should target more diverse populations of older adults (including males), as well as older adults who are not physically active, in order to better examine the impact of Yoga compared to other forms of exercise.

Previous research has indicated that exercise has a small but significant effect on the mental well-being

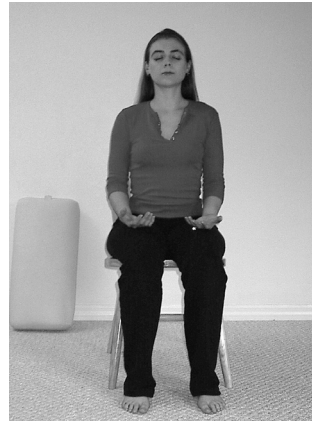
of the elderly. The results of this study, though limited by issues of power, support this finding and indicate that mindfulness-based exercise practices such as Yoga may provide additional benefits beyond exercise alone. Further research is needed to enhance understanding of the benefits of exercise for elderly individuals, the characteristics of the exercise programs to which elderly participants are most likely to adhere, and the factors which limit the impact of exercise in older participants. An improved understanding of these issues may lead to the development of more effective exercise programs for older adults, targeted to increase motivation and adherence, and therefore fitness, functional independence, and well-being of the elderly.

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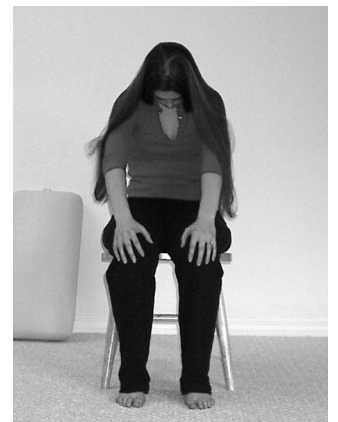
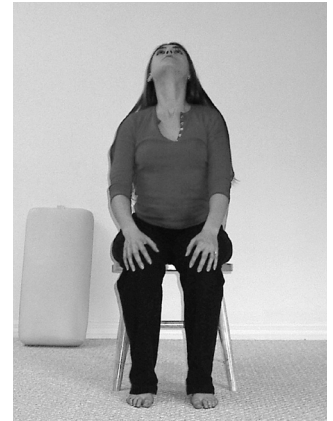
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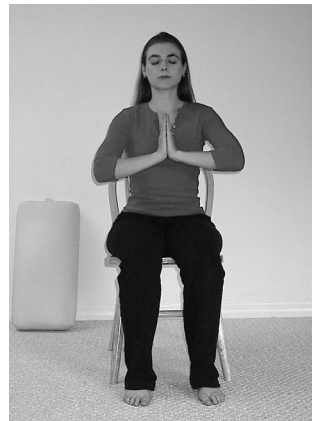
Appendix 1. Sample Chair Yoga Class Lesson Plan³⁵



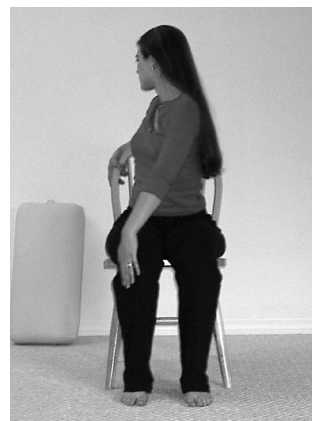
(1) Simple sitting: breathing and meditation instruction.



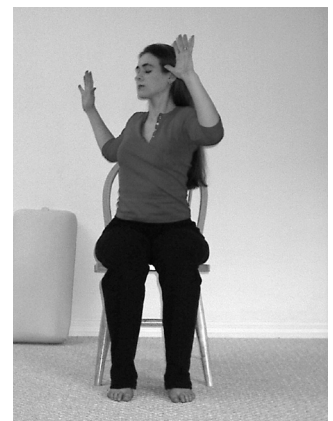
(4) and (5) *Kundalini* spinal stretches (inhaling, lift the chest and chin, exhaling roll the spine and tuck the chin in; continue cycle for two full minutes).



(2) *Namaste*: Hands to center for centering awareness (10–15 diaphragmatic breaths).



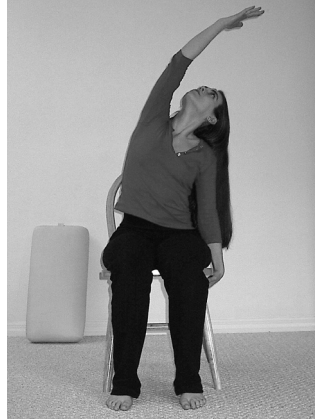
(3) Seated twists (5–10 deep breaths held per side)



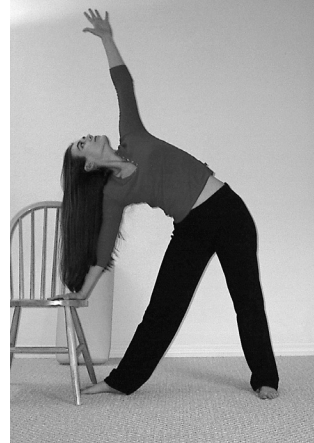
(6) *Kundalini* twists (eyes closed, torso rotation timed with breath pattern).



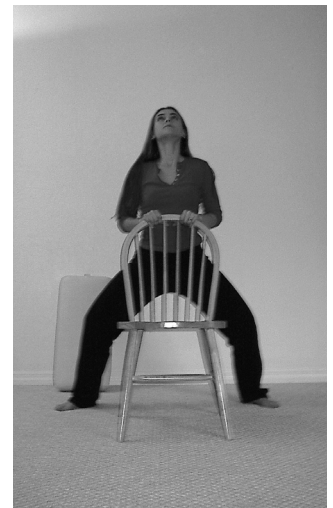
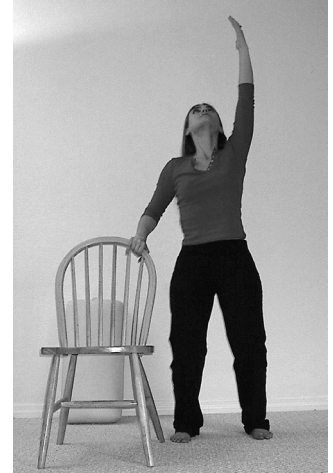
(7) *Kundalini* arm flying (eyes closed, arms gently move up and down for two full minutes to develop mental focusing in spite of muscular discomfort).



(10) Side stretches (5–10 deep breaths per side).



(13) Assisted triangle (Standing beside the chair, feet wide, hand rests on seat of the chair, opposite hand lifts upward; gaze focuses on upper thumb. Hold 5–10 deep breaths).



(15) and (16) Chair pose (Feet are wider than hip width, knees are bent, tailbone tucked under, abdomen pulled back toward the spine. Gaze and chest lift upward. Hands may hold onto the back of the chair for support; if steady, extend one or both arms up toward the sky. Hold for five deep breaths.)



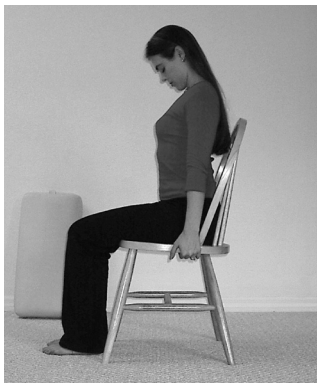
(8) Head and neck stretches (front and back; turn to left and right side; left and right ear to shoulder; gentle neck rolls).



(11) Forward bend (5–10 deep breaths, quieting of mind takes energy within).



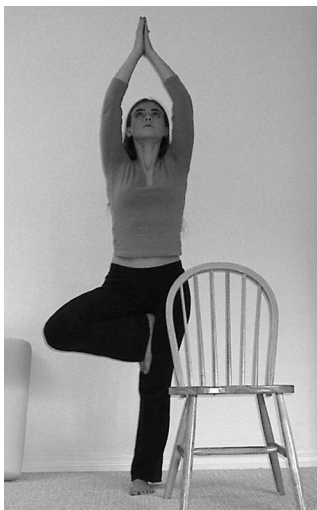
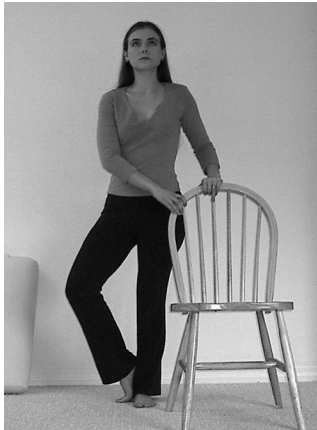
(14) *Tadasana* (Mountain pose; Toes turned in slightly, heels slightly apart. Weight centers above arches. Shoulders roll down and back, chest lifts. Eyes close. Work toward stillness of mind and body. Hold for 5–10 breaths up to 10 full minutes.)



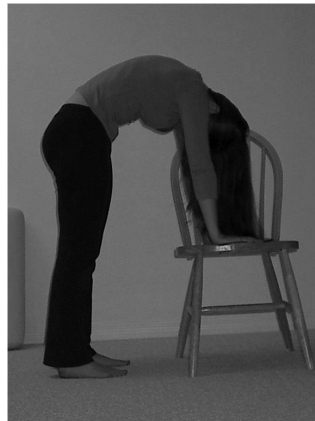
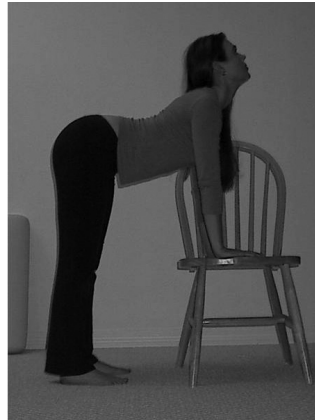
(9) *Dandasana* (Staff pose; hands press firmly down, chest lifts up, shoulders roll down and back, chin tucks into throat lock; remain stationary for one to two minutes to cultivate internal stillness).



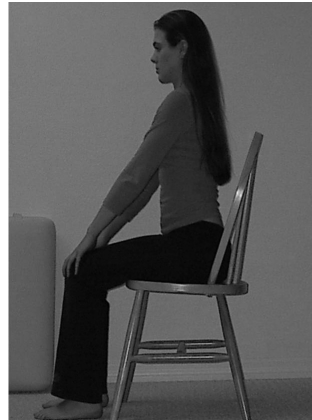
(12) Leg lifts (each leg forward twice, each leg to side twice; hold each for 5–10 deep breaths to cultivate mental and physical endurance).



(17) (18) and (19) Tree pose (Stand on left foot. Right foot comes to ankle, calf, or upper thigh with knee turned outward. Hands at the back of the chair for support, or one or both hands may come to center and then extend upward. Hold 5–10 deep breaths, gaze focused at one point. Repeat both sides.)



(20) and (21) Cat and cow pose (Stand beside chair, feet directly above hips, bend at waist and place hands on chair, directly under shoulders. Inhale, lift the chest and chin, lift the tailbone, arch the spine. Exhale, roll the spine, tucking tailbone and chin in. Repeat, moving with breath, for one to two minutes.)



(22) Stomach pump (Begin with diaphragmatic breathing. After 10–15 diaphragmatic breaths, exhale deeply, pulling the stomach in towards the backbone. Hold the emptiness, and begin to pump the stomach back and forth (contracting the abdominal muscles like fireplace bellows). Inhale deeply. Exhale completely and then pump again. Continue for five sets.)



(23) and (24) Feet and hand stretch. (Extend arms and legs. Focus on creating space between fingers and toes and extend the joints as far as possible, while inhaling to open up completely. Exhale, slowly curling-in fingers and toes with control and contracting body. Repeat, inhaling open wide and exhaling and contracting for 5–10 repetitions.)



(25) Meditation for centering. (Eyes closed, simple sitting posture, work on meditation techniques – breath counting, square breathing, etc.)



(26) *Namaste* (Eyes closed, palms pressed together in front of center of chest. Awareness and energy focused within.)