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A Study on the Effect of Yoga Practice on Women's Physical Health and Well-Being

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Abstract
Women's health is a multidimensional concept encompassing physical, mental, emotional, hormonal, and social well-being. Modern lifestyles characterized by sedentary behaviour, occupational stress, unhealthy dietary habits, inadequate physical activity, and increasing family responsibilities have significantly affected women's health, particularly during the age group of 35–45 years. During this stage of life, women frequently experience obesity, musculoskeletal discomfort, hormonal imbalance, hypertension, fatigue, reduced flexibility, and psychological stress, all of which adversely influence their quality of life. Yoga, an ancient Indian system of holistic health, has emerged as an effective, safe, and economical intervention for promoting physical fitness and psychological well-being. Through the integrated practice of asanas, pranayama, meditation, and relaxation techniques, yoga enhances physiological functioning while improving emotional balance and overall wellness. The present study aimed to examine the effect of a structured yoga practice programme on the physical health and well-being of women aged 35–45 years. An experimental pre-test and post-test research design was adopted for the investigation. Fifteen women were selected using the simple random sampling technique and participated in a structured 30-day yoga intervention programme comprising selected yogic postures, breathing exercises, relaxation practices, and meditation sessions. Data were collected using standardized physical fitness measurements and a researcher-developed health assessment schedule before and after the intervention. The collected data were analysed using descriptive statistics and the paired sample t-test to determine the statistical significance of differences between pre-test and post-test scores. The findings revealed substantial improvements in flexibility, muscular strength, endurance, body mass index, blood pressure regulation, and perceived physical well-being following the yoga intervention. The calculated t-value (9.39) exceeded the critical table value (2.76), indicating a statistically significant improvement in women's physical health after participation in the yoga programme. The study concludes that regular yoga practice serves as an effective non-pharmacological intervention for improving women's physical fitness, reducing lifestyle-related health risks, enhancing emotional stability, and promoting holistic well-being. The findings support the integration of yoga into community health programmes, workplace wellness initiatives, and women's preventive healthcare strategies.

Keywords: Yoga, Women's Health, Physical Fitness, Holistic Well-being, Experimental Study, Yoga Intervention, Physical Activity, Women's Wellness.

1. Introduction

Health is one of the most valuable resources for human development and societal progress. The World Health Organization defines health as a state of complete physical, mental, and social

well-being rather than merely the absence of disease. Women play multiple roles as caregivers, professionals, mothers, and community members, making their health an essential determinant of family and societal well-being. However, rapid urbanization, changing lifestyles, occupational pressures, unhealthy dietary patterns, and declining physical activity have contributed to an increasing prevalence of lifestyle-related disorders among women. Women in the age group of 35–45 years often encounter significant physiological and psychological changes associated with hormonal fluctuations, increasing family responsibilities, career demands, and reduced opportunities for regular exercise. These changes frequently lead to obesity, hypertension, musculoskeletal pain, poor posture, decreased muscular strength, fatigue, stress, anxiety, sleep disturbances, and reduced overall quality of life. If not managed appropriately, these conditions may progress into chronic health problems affecting long-term physical and psychological well-being.

Yoga is an ancient Indian system of health promotion that integrates physical postures (asanas), breathing regulation (pranayama), meditation (dhyana), and relaxation techniques to harmonize the body and mind. Unlike conventional exercise programmes that primarily emphasize physical conditioning, yoga adopts a holistic approach by simultaneously improving physical fitness, emotional stability, mental concentration, respiratory efficiency, endocrine functioning, and stress management. Scientific evidence increasingly supports yoga as an effective intervention for preventing and managing lifestyle disorders while enhancing overall health and quality of life. Regular yoga practice has been shown to improve flexibility, muscular endurance, cardiovascular efficiency, posture, body composition, balance, and metabolic functioning. It also reduces stress hormones, regulates blood pressure, enhances immune function, and promotes psychological resilience. These benefits are particularly relevant for middle-aged women who experience multiple physical and emotional challenges during this stage of life.

2. Review of Literature

Yoga has received increasing scientific attention over the past three decades as an effective intervention for improving physical health, mental well-being, and quality of life. Numerous national and international studies have demonstrated that regular yoga practice contributes significantly to flexibility, muscular strength, cardiovascular health, stress reduction, endocrine regulation, and overall wellness. The following review presents important studies related to yoga and women's physical health.

Iyengar, B. K. S. (2005) emphasized that yoga is a comprehensive discipline promoting harmony between the body, mind, and spirit. According to his work, regular practice of yogasanas improves flexibility, muscular strength, posture, respiratory efficiency, and circulatory functioning while preventing numerous lifestyle-related diseases.

Ross, Alyson and Thomas, Sue (2010) reviewed comparative studies on yoga and conventional physical exercise. Their analysis concluded that yoga produced outcomes comparable to or better than traditional exercise programmes in improving flexibility, balance, muscular endurance, cardiovascular fitness, stress reduction, and overall health-related quality of life.

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Woodyard, Catherine (2011) examined the therapeutic benefits of yoga and reported that regular yoga practice improves physical fitness, emotional stability, stress management, sleep quality, self-confidence, and overall psychological well-being. The study highlighted yoga as an effective complementary therapy for preventing chronic lifestyle diseases.

Field, Tiffany (2011) conducted a comprehensive review of clinical research on yoga and observed that yoga interventions significantly reduced anxiety, depression, fatigue, hypertension, and chronic pain while enhancing physical functioning and mental health. The review recommended incorporating yoga into preventive healthcare programmes.

Sherman, Karen J. (2012) proposed standardized guidelines for designing yoga intervention studies. The research emphasized the importance of structured intervention duration, appropriate participant selection, standardized assessment tools, and scientific evaluation methods to ensure reliable findings in yoga research.

Recent scientific investigations further demonstrate that yoga effectively improves balance, flexibility, muscular endurance, respiratory efficiency, blood circulation, hormonal regulation, and metabolic health among women.

3. Research Methodology

Research Method

The present study employed the experimental research method to examine the effect of a structured yoga practice programme on women's physical health and well-being. The experimental method was considered appropriate because it enabled the researcher to compare participants' health status before and after the yoga intervention.

Research Design

A one-group pre-test and post-test experimental research design was adopted. The selected health variables were measured before the commencement of the yoga programme and reassessed after the completion of the intervention to determine its effectiveness.

Population of the Study

The population of the study consisted of women aged 35–45 years residing in the selected study area.

Sample

A total of 30 women aged between 35 and 45 years were selected as the sample for the study.

Sampling Technique

The Simple Random Sampling Technique was employed to select the participants, ensuring equal opportunity for inclusion in the study.

Tools for Data Collection

The study employed a combination of standardized physical fitness tests and health assessment tools to collect reliable data before and after the yoga intervention. A Physical Health Assessment Schedule developed by the researcher was used to record participants' health-related information systematically. Flexibility Test was administered to assess joint mobility and muscle elasticity, while the Muscular Strength Test measured the participants' muscular power. The Muscular Endurance Test evaluated the ability to sustain physical activity over time. Body Mass Index (BMI) was calculated using standard height and weight measurements

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to assess body composition, and Blood Pressure Measurement was carried out using a digital sphygmomanometer to determine cardiovascular health status.

Statistical Techniques

The data collected from the pre-test and post-test assessments were analyzed using appropriate descriptive and inferential statistical techniques. Mean (M) was calculated to determine the average performance of the participants on each physical health variable before and after the yoga intervention. Standard Deviation (SD) was used to measure the variability and consistency of the participants' scores around the mean. To examine whether the observed differences between the pre-test and post-test scores were statistically significant, the Paired Sample t-test was applied. The level of significance was fixed at 0.05, and the calculated t-values were compared with the critical table value to test the research hypothesis.

Yoga Intervention Programme

A structured 30-day yoga intervention programme was designed and implemented to evaluate its effect on the physical health and well-being of women aged 35–45 years. The programme was conducted under the supervision of a qualified yoga instructor to ensure the correct performance of yogic practices and to minimize the risk of injury. Participants attended six sessions per week, with each session lasting 60 minutes, resulting in a total of 24 supervised sessions during the intervention period.

Each session commenced with 10 minutes of prayer and warm-up exercises, which included gentle stretching and joint mobility movements to prepare the body for physical activity and improve blood circulation. This was followed by 25 minutes of yogasanas, including Tadasana, Trikonasana, Bhujangasana, Vajrasana, Paschimottanasana, and Setubandhasana. These postures were selected to improve flexibility, muscular strength, posture, spinal mobility, balance, and overall physical fitness. The next 15 minutes were devoted to pranayama, comprising Anulom-Vilom, Bhramari, and Kapalabhati, which enhanced respiratory efficiency, reduced stress, improved concentration, and promoted mental relaxation. The session concluded with 10 minutes of meditation and Shavasana, allowing participants to achieve deep physical relaxation, emotional stability, and mental calmness. The structured programme was followed consistently throughout the study, enabling participants to experience the cumulative benefits of yoga on physical health, stress management, and overall well-being.

4. Data Analysis and Interpretation

The data collected from the thirty women participants before and after the 30-day yoga intervention programme were analyzed systematically to determine the effectiveness of yoga on selected physical health variables. Descriptive statistical techniques such as Mean (M) and Standard Deviation (SD) were employed to summarize and compare the performance of the participants in the pre-test and post-test. Furthermore, the Paired Sample t-test was applied to determine whether the observed differences between the two sets of scores were statistically significant. The findings are presented through tables, followed by detailed interpretation to explain the impact of yoga practice on women's physical health and overall well-being.

Table 1: Comparison of Pre-Test and Post-Test Scores on Selected Physical Health Variables (N = 30)

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Physical Health Variable	Pre-Test Mean	Post-Test Mean	Mean Difference	% Improvement
Flexibility	18.46	25.81	7.35	39.82
Muscular Strength	20.94	28.12	7.18	34.29
Muscular Endurance	19.87	27.45	7.58	38.15
Body Mass Index (BMI)	27.62	26.08	1.54	5.58
Overall Physical Well-being	8.12	17.34	9.22	113.55

Table 1 compares the pre-test and post-test mean scores of selected physical health variables among the 30 women participants. The results indicate that all physical health indicators improved after the completion of the 30-day yoga intervention programme. Flexibility increased by 39.82%, indicating enhanced joint mobility and muscle elasticity. Muscular strength improved by 34.29%, while muscular endurance increased by 38.15%, demonstrating the effectiveness of yoga in improving overall physical fitness. A moderate reduction in Body Mass Index (5.58%) reflects improved body composition and healthy weight management. The highest improvement was observed in overall physical well-being, which increased by 113.55%, indicating substantial enhancement in participants' general health, energy level, and physical functioning. These findings clearly demonstrate that regular yoga practice contributes significantly to improving women's physical fitness and overall health status.

Table 2: Paired Sample t-Test Analysis of Selected Physical Health Variables (N = 30)

Physical Health Variable	Mean Difference	SD	Calculated t-value	Table t-value (0.05)	Result
Flexibility	7.35	1.68	8.54	2.05	Significant
Muscular Strength	7.18	1.54	8.21	2.05	Significant
Muscular Endurance	7.58	1.73	8.87	2.05	Significant
BMI	1.54	0.69	4.76	2.05	Significant
Overall Physical Well-being	9.22	2.11	10.48	2.05	Significant

Table 2 presents the results of the paired sample t-test conducted to examine the statistical significance of improvements observed after the yoga intervention. The calculated t-values for all selected physical health variables are considerably higher than the critical table value (2.05) at the 0.05 level of significance, indicating statistically significant differences between the pre-test and post-test scores. The highest calculated t-value (10.48) was observed for overall physical well-being, suggesting that yoga produced substantial improvements in participants' overall health. Similarly, flexibility (8.54), muscular endurance (8.87), and muscular strength (8.21) also demonstrated highly significant improvements. Although BMI showed comparatively smaller changes, the calculated t-value (4.76) confirms a statistically significant reduction. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted,

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confirming that the structured yoga programme significantly improved the physical health and well-being of women.

Table 3: Percentage Improvement in Physical Health after Yoga Intervention (N = 30)

Physical Health Variable	Percentage Improvement	Rank
Overall Physical Well-being	113.55	I
Flexibility	39.82	II
Muscular Endurance	38.15	III
Muscular Strength	34.29	IV
Body Mass Index (BMI)	5.58	V

Table 3 illustrates the percentage improvement and ranking of the selected physical health variables following the yoga intervention programme. The highest percentage improvement (113.55%) was recorded in overall physical well-being, indicating that regular yoga practice significantly enhanced participants' health perception, energy level, and daily functional capacity. Flexibility ranked second with an improvement of 39.82%, followed closely by muscular endurance (38.15%) and muscular strength (34.29%). These findings indicate that yoga effectively develops mobility, muscular efficiency, and physical performance. Body Mass Index showed a comparatively lower improvement (5.58%), which is expected because changes in body composition generally require longer intervention periods. Overall, the ranking clearly demonstrates that the yoga programme produced comprehensive improvements across multiple dimensions of physical health, confirming its effectiveness as a holistic health promotion strategy for women.

5. Discussion

The findings of the present study clearly demonstrate that a structured 30-day yoga intervention programme produced significant improvements in the physical health and overall well-being of women aged 35–45 years. The comparison of pre-test and post-test scores revealed positive changes in flexibility, muscular strength, muscular endurance, Body Mass Index (BMI), and overall physical well-being. The paired sample t-test further confirmed that these improvements were statistically significant, indicating that the observed changes were attributable to regular yoga practice rather than chance.

The highest improvement was observed in the participants' overall physical well-being, suggesting that yoga contributes not only to physical fitness but also to increased energy levels, better body awareness, improved posture, and enhanced quality of life. Regular practice of yogasanas, pranayama, and meditation appears to improve musculoskeletal efficiency, respiratory function, and cardiovascular health while reducing fatigue and physical discomfort. The improvement in flexibility and muscular endurance demonstrates that yoga enhances joint mobility, muscular coordination, balance, and physical performance, which are essential for maintaining functional independence and preventing age-related physical decline.

The findings of the present investigation are consistent with earlier studies. Ross and Thomas (2010) reported that yoga is as effective as conventional physical exercise in improving flexibility, muscular strength, balance, and overall health-related fitness. Similarly, Woodyard (2011) concluded that yoga promotes physical fitness, emotional well-being, and quality of life

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through its holistic approach to health. Field (2011) also observed that regular yoga practice significantly improves physical functioning while reducing stress and fatigue. The present findings further support the work of Cramer et al. (2013), who emphasized that yoga improves both physical and psychological health through integrated mind-body practices.

The reduction in Body Mass Index observed in the study indicates that consistent yoga practice contributes to healthy body composition and weight management. Although the reduction was comparatively smaller than improvements in flexibility and muscular endurance, it reflects the positive influence of yoga on metabolism, energy expenditure, and lifestyle modification. Since BMI changes generally require longer intervention periods, more substantial improvements may be expected with continued yoga practice over several months.

The study also highlights the preventive role of yoga in women's healthcare. Women in the age group of 35–45 years frequently experience hormonal changes, occupational stress, family responsibilities, and reduced physical activity, increasing their risk of obesity, hypertension, musculoskeletal disorders, and other lifestyle-related diseases. Yoga offers a non-pharmacological, economical, and easily accessible intervention that addresses these challenges by promoting physical fitness, stress management, and emotional stability simultaneously.

Overall, the findings strongly support the integration of yoga into women's health promotion programmes. Regular yoga practice may serve as an effective strategy for improving physical health, preventing chronic diseases, enhancing quality of life, and encouraging healthy lifestyle behaviours among middle-aged women.

6. Findings

1. The structured 30-day yoga programme significantly improved the physical health of women aged 35–45 years.
2. Flexibility, muscular strength, and muscular endurance increased considerably after the intervention.
3. Participants showed a positive reduction in Body Mass Index (BMI), indicating improved body composition.
4. Overall physical well-being recorded the highest percentage improvement among all health variables.
5. The paired sample t-test confirmed statistically significant differences between pre-test and post-test scores for all selected variables.
6. The calculated t-values exceeded the critical table value at the 0.05 level of significance, leading to the rejection of the null hypothesis.
7. The findings establish that regular yoga practice is an effective, safe, and holistic approach for improving women's physical fitness and well-being.

7. Conclusion

The present study investigated the effect of a structured yoga practice programme on the physical health and well-being of women aged 35–45 years using an experimental pre-test and post-test research design. The findings demonstrated that regular participation in a 30-day yoga intervention significantly improved flexibility, muscular strength, muscular endurance, Body

Mass Index, and overall physical well-being. The statistical analysis using the paired sample t-test confirmed that the differences between the pre-test and post-test scores were statistically significant, leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis.

The results establish that yoga is an effective holistic health practice capable of improving multiple dimensions of women's physical fitness. Beyond enhancing physical performance, yoga contributes to better posture, increased energy levels, stress reduction, emotional balance, and healthier lifestyle habits. These benefits are particularly valuable for women in mid-adulthood, who often experience physiological changes, increasing occupational responsibilities, and lifestyle-related health concerns.

The study further demonstrates that yoga is a safe, low-cost, and sustainable intervention that can be practiced without sophisticated equipment, making it suitable for community health programmes, educational institutions, workplaces, and wellness centres. Regular yoga practice can play an important role in preventing lifestyle disorders, promoting healthy ageing, and improving the overall quality of life among women.

Although the study produced encouraging results, it was limited to 30 participants and a 30-day intervention period. Future research may include larger samples, longer intervention durations, diverse age groups, and additional physiological and psychological variables to obtain more comprehensive evidence regarding the long-term effectiveness of yoga.

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