



# COMPARING BRISK WALKING VS YOGIC PRACTICES: AN EXPERIMENTAL INVESTIGATION

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## ABSTRACT

The aim of this study was to investigate the impact of brisk walking and yoga on the flexibility and blood pressure of middle-aged men. Forty-five individuals from Coimbatore, Tamil Nadu, aged between 40 to 45 years, were selected for the study. They were divided into three equal groups ( $n = 15$ ): Group I underwent brisk walking, Group II practiced yoga, and Group III served as the control group without any specific training. The training regimen lasted five days a week for twelve weeks. Flexibility was assessed using the sit and reach test, while blood pressure was measured using a sphygmomanometer before and after the training period.

Analysis of covariance (ANCOVA) was employed to determine any significant differences among the experimental groups and the control group regarding the selected variables. Additionally, the Scheffé test was utilized as a post-hoc test due to the involvement of three groups in the study. The findings indicated that both brisk walking and yoga positively influenced the criterion variables of flexibility and blood pressure among middle-aged men compared to the control group. However, no significant difference was observed between the training groups themselves.

**KEYWORDS:** brisk walking, yoga practice, flexibility, systolic blood pressure, diastolic blood pressure

## INTRODUCTION

All philosophers, whether spiritualists or materialists, have acknowledged the reality of pure Consciousness as the foundational principle of life, from which intelligence, volition, love, and thought emerge [1]. This understanding extends beyond mere awareness of oneself, impacting the subconscious realms as well. It constitutes a practical physiological discipline capable of elevating individuals to a "supra mundane level" [2]. Yoga, introduced by Patanjali thousands of years ago in India, encapsulates these principles [3]. As Swami Vishnu Devananda stated, "Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow" [4].

Yogasanas, or yoga postures, hold profound significance in nurturing physical, mental, and spiritual well-being, far beyond the effects of mere physical exercises which primarily target muscles and bones. Aerobic exercises, characterized by the utilization of oxygen in the body's energy production processes, play a pivotal role in overall health [5]. Walking, for instance, engages all muscles in the body, making it beneficial for muscle development [10]. Walking programs, particularly those featuring moderate intensity levels, have gained popularity as recreational activities and have proven highly effective in promoting physical activity and exercise adherence [11]. Moreover, regular walking at a moderate to vigorous intensity level has demonstrated notable benefits for cardiovascular and psychological health [12].

## METHODS

This research investigates the effects of brisk walking and yoga practice on flexibility, systolic blood pressure, and diastolic blood pressure among individuals in Coimbatore, Tamil Nadu, aged 40 to 45 years. Forty-five subjects were randomly allocated into three groups, each comprising fifteen participants. Group I ( $n = 15$ ) engaged in brisk walking, Group II ( $n = 15$ ) practiced yoga, and Group III ( $n = 15$ ) served as the control.

The training regimen spanned twelve weeks, with sessions conducted five days per week during morning hours (6.30 am to 8 am). Flexibility was assessed using the sit and reach test, while systolic and diastolic blood pressure were measured using a sphygmomanometer. Prior to commencing the experiment, all subjects in the brisk walking, yoga practice, and control groups underwent a pre-test one day before training initiation. Data on flexibility and blood pressure were collected during this pre-test.

Following the twelve-week training period, a post-test was conducted one day after training completion to assess any changes in the criterion variables. Analysis of covariance (ANCOVA) was utilized to determine significant differences among the experimental and control groups for each criterion variable, with a confidence level of .05 considered appropriate. Given the involvement of three groups, the Scheffé S test was employed as a post-hoc test, as presented in Table II.



**ANALYSIS OF DATA**

The data collected prior to and after the experimental periods on flexibility, systolic and diastolic blood pressure on brisk walking group, yoga practice group and control group were analysed and presented in the following table - I.

**Table I: Analysis of Covariance and ‘F’ ratio for Flexibility, Systolic Blood Pressure and Diastolic Blood Pressure for Brisk walking Group, Yoga Practice Group and Control Groups**

Variable Name	Group Name	Brisk Walking Group	Yoga Practice Group	Control Group	‘F’ Ratio
Flexibility (in inches)	Pre-test Mean ± S.D	5.87 ± 0.31	5.41 ± 0.13	5.59 ± 0.28	0.997
	Post-test Mean ± S.D.	6.99 ± 0.17	7.32 ± 0.218	5.27 ± 0.212	14.99*
	Adj. Post-test Mean	6.839	7.587	5.414	86.33*
Systolic blood pressure (in mmHg)	Pre-test Mean ± S.D	135.01 ± 2.27	137.81 ± 2.86	135.59 ± 1.97	0.97
	Post-test Mean ± S.D.	132.67 ± 3.18	129.34 ± 2.41	136.16 ± 2.26	18.39*
	Adj. Post-test Mean	131.934	130.378	135.882	55.39*
Diastolic blood pressure (in mmHg)	Pre-test Mean ± S.D	86.59 ± 2.44	87.86 ± 3.72	86.39 ± 2.55	0.89
	Post-test Mean ± S.D.	84.73 ± 3.45	83.31 ± 2.86	87.19 ± 1.59	35.88*
	Adj. Post-test Mean	84.131	83.215	86.837	69.53*

\* Significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 2 and 43 and 2 and 42 were 3.21 and 3.22 respectively).

**Table I** displays the results indicating that the pre-test mean 'F' ratio for flexibility in the brisk walking group, yoga practice group, and control group was 0.997, which was found to be insignificant at the 0.05 level of confidence. However, the post-test and adjusted post-test mean 'F' ratio value for the experimental groups and the control group was 14.99 and 86.33, respectively, showing significance at the 0.05 level of confidence.

Similarly, for systolic blood pressure, the pre-test mean 'F' ratio for the brisk walking group, yoga practice group, and control group was 0.97, which was insignificant at the 0.05 level of confidence. However, the post-test and adjusted post-test mean 'F' ratio value for the experimental group and the control group was 18.39 and 55.39, respectively, showing significance at the 0.05 level of confidence.

For diastolic blood pressure, the pre-test mean 'F' ratio for the brisk walking group, yoga practice group, and control group was 0.89, which was insignificant at the 0.05 level of confidence. However, the post-test and adjusted post-test mean 'F' ratio value for the experimental groups and the control group was 35.88 and 69.53, respectively, showing significance at the 0.05 level of confidence. To determine which paired means exhibited significant differences among the groups, the Scheffé S test was employed

**Table II: Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Flexibility, Systolic Blood Pressure and Diastolic Blood Pressure**

Adjusted Post-test Mean Difference on Flexibility (in inches)				
Brisk Walking Group	Yoga Practice Group	Control Group	Mean Difference	CI
6.839		5.414	1.425*	0.513
6.839	7.587		0.748*	0.513
	7.587	5.414	2.173*	0.513
Adjusted Post-test Mean Difference on Systolic Blood Pressure (in mmHg)				
131.934		135.882	3.948*	1.16
131.934	130.378		1.556*	1.16
	130.378	135.882	5.504*	1.16
Adjusted Post-test Mean Difference on Diastolic Blood Pressure (in mmHg)				
84.131		86.837	2.706*	0.355
84.131	83.215		0.916*	0.355
	83.215	86.837	3.622*	0.355

\* Significant at 0.05 level of confidence.

**RESULTS**

**Table II** indicates the results of the Scheffé’s Test for the difference between adjusted post-test mean values on flexibility. The comparison between the brisk walking group and the control group yielded a difference of 1.425, while the yoga practice group versus the control group exhibited a difference of 2.173. These differences were found to be significant at the 0.05 level of confidence.



Moreover, significant differences were observed in systolic blood pressure between the brisk walking group and the control group (3.948), the brisk walking group and the yoga practice group (1.556), and the yoga practice group and the control group (5.504). Additionally, significant differences were found in diastolic blood pressure between the brisk walking group and the control group (2.706), the brisk walking group and the yoga practice group (0.916), and the yoga practice group and the control group (3.622), all significant at the 0.05 level of confidence following the respective training programs.

Furthermore, the study's results indicated no significant difference between the training groups on the selected criterion variables.

## CONCLUSIONS

Yoga practice periods led to improvements in flexibility [8, 13], while brisk walking also contributed to enhanced flexibility [16]. Additionally, both the brisk walking and yoga practice groups experienced decreases in systolic and diastolic blood pressure [6, 7, 9, 14, 15, 18]. These improvements were observed in comparison with the control group. Murphy et al. (2007) [17] demonstrated that brisk walking not only enhances VO<sub>2</sub>max but also leads to reductions in body weight, BMI, percentage of body fat, and resting diastolic blood pressure.

In summary, the collective findings suggest that both brisk walking and yoga practices serve as effective means to enhance physical fitness and improve physiological variables.

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