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Effect of selected yogic practices and Bharatanatyam Adavus on lipid profile levels among overweight women

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Abstract

To observe the Impact of regular yogic practices and Bharatanatyam adavus in reducing body fat and elevated lipids in overweight women. Yoga is ultimate for developing harmony among body, mind and spirit. The purpose of this study was to investigate the effect of selected yogic practice and Bharatanatyam adavu training on improving selected physiological variables of women at Calicut District.

Method: Sixty Overweight women were divided into three equal groups on random basis (groups I, II, and III) consisting of 20 study participants in each group. Two out of the three groups were given experimental treatments: yogic practice (group- I), Bharatanatyam adavu (group- II) while the remaining one group (group- III) was designated as control group. The study was formulated as completely randomized comparative trial, consisting of a pre-test and post-test. The collected data from the three group's pretest and post-test were statistically analyzed using analysis of covariance (ANCOVA). The Least significant difference (LSD) post hoc test was applied to determine significant differences among paired mean values. The 95% level of confidence was used and p -value <0.05 was considered as statistically significant.

Results: The findings of the study on Biochemical variables revealed that yogic practice (YP) group and Bharatanatyam adavu (BA) group showed significant superiority over the control group in reducing LDL ($p < 0.05$). The mean change made by the two experimental groups ($p > 0.05$) didn't show statistically significant difference. The finding also revealed that YP group and BA group significantly improved HDL than control group ($p > 0.05$). The mean change made by the two experimental groups ($p < 0.05$) didn't show statistically significant difference.

Conclusion: The experimental groups; selected Bharatanatyam adavu (BA) and yogic practice groups (YPG) had significantly improved the selected Biochemical variables in contrast to control group. BA training was found to be significantly better on improving resting heart rate than yogic practice group and control group.

Keywords: Yoga, Bharatanatyam and lipid profile

Introduction

Yoga, an ancient practice dating back thousands of years, seeks to unite the mind, body, and spirit through the Sanskrit term 'Yuj,' meaning 'to unite' or 'to yoke.' Originating from India, Yoga is a comprehensive system promoting physical health, mental well-being, and spiritual development. It involves physical postures (asanas), breathing techniques (pranayama), meditation, and ethical principles, guiding individuals towards self-realization and inner peace. In contrast, Bharatanatyam, a classical dance form from South India, weaves rhythm, expression, and symbolic hand gestures to convey stories, emotions, and spiritual concepts from ancient scriptures. Beyond artistic expression, Bharatanatyam serves as a medium to experience and communicate spiritual themes and messages. This highly stylized and technical dance requires rigorous training, encompassing rhythm (Nritta), expressive performance (Nritya), and dramatic storytelling (Natya), as reflected in its name derived from Bhava (expression), Raga (melody), and Tala (rhythm).

Both Yoga and Bharatanatyam demand physical fitness, focus, and discipline, striving to unite individual consciousness with the universal consciousness. They achieve this in distinct ways: Yoga through meditation and spiritual practices, and Bharatanatyam through the portrayal of spiritual narratives and devotion.

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The symbiotic connection between Yoga and Bharatanatyam manifests in several aspects. Physically, Yoga enhances a dancer's strength, flexibility, and endurance for Bharatanatyam, while the discipline of Bharatanatyam adds grace and balance to a yogi's asana practice.

Mentally, both practices require concentration, discipline, and inner awareness. Yoga's mindfulness aids dancers in being present during performances, and Bharatanatyam nurtures emotional understanding and empathy in a yogi's practice.

Spiritually, Yoga and Bharatanatyam are pathways to self-realization, transcending the physical and emotional realms to touch the spiritual core. Integrating these disciplines can lead to improved physical health, deeper emotional insights, and accelerated spiritual growth, providing a holistic approach to overall well-being. The interplay between Yoga and Bharatanatyam offers a powerful combination, enriching the practitioner's journey towards wholeness and self-discovery.

The global rise in overweight and obesity has led to growing concerns about associated cardiovascular and metabolic health risks. Among overweight individuals, elevated lipid levels such as total cholesterol, triglycerides, and LDL cholesterol are frequently observed, while higher HDL cholesterol levels are considered beneficial for heart health.

Yogic practices and Bharatanatyam adavus have gained recognition for their potential to improve physical and mental well-being. However, their impact on biochemical parameters, specifically lipid profiles in overweight women, remains an area of exploration. Investigating the effects of these traditional practices on lipid profiles could provide valuable insights into their potential as interventions for managing lipid imbalances and promoting overall health in overweight individuals.

The connection between Yoga and Bharatanatyam transcends

the realms of physical, mental, and spiritual aspects. They share a common philosophy of unity, aiming to dissolve the barriers between the individual self and the universal consciousness. Yoga achieves this union through meditation and self-inquiry, whereas Bharatanatyam expresses it through the dancer's devotion and surrender to the divine.

Methods

The investigator randomly selected 60 overweight adult women age ranged from 30 to 45 years. The selected subjects were divided into three groups. Experimental group I underwent yoga practices, group II practiced Bharatanatyam adavus, and group III served as the control group, weekly for five days (Monday to Friday), for 60 minutes per day, over a period of twenty weeks. HDL, LDL and triglycerides were selected as the criterion variables. All the subjects were tested both before and immediately after the training period on the selected dependent variables. The collected data was statistically analyzed using analysis of covariance (ANCOVA) to determine if there were any significant differences between the groups before and immediately after the training period on the selected dependent variables. In all cases, a significance level of .05 was employed.

Analysis: Triglycerides and Baseline lipid profiles, HDL cholesterol, and LDL cholesterol, were measured for all participants before the interventions. Blood samples were collected after an overnight fast, and the lipid profile was analyzed using standard biochemical assays. Post-intervention lipid profiles were compared with baseline values to assess changes.

Results

Table 1: Analysis of co-variance of the pre-test and post-test means of the yoga and bharathanatym group in triglycerides

Test	Yoga Practice Group	Bharathanatyam Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test								
Mean	124.95	121.96	121.73	Between	129.3	2	64.65	0.82
S.D.	6.62	6.78	12.16	Within	4515.7	57	79.22	
Post Test								
Mean	113.08	116.20	122.31	Between	882.6	2	441.3	4.73*
S.D.	8.47	6.28	12.98	Within	5312.2	57	93.20	
Adjusted Post Test								
Mean	111.37	116.96	123.26	Between	1384.5	2	692.25	17.26*
				Within	2245.8	56	40.10	

(The table values required for significance at .05 level of confidence for 2 and 57 and 2 and 56 are 3.15 and 3.15 respectively).

From the above table results proved that the pre-test mean score on Bharatanatyam group is 26.72, yoga group is 26.20. Therefore, it is inferred that the obtained calculated 'F' value is 1.92 for Pre-Test mean score. Therefore the framed research hypothesis is rejected. It is inferred that there is no significant difference between the pre-test means of the Body mass Index (Kg/m²). However, the Post-test mean score on Bharatanatyam group is 25.90 and yoga group is 25.46. Therefore, it is evident that the obtained 'F' value 2.83 for Post-Test mean score. Therefore the framed research hypothesis is accepted. Further, the above table taking into consideration of the adjusted post-test mean score on Bharathanatyam group is 26.08, yoga group is 25.83. Therefore, it is evident that the calculated 'F' value is 3.25. Therefore the framed research hypothesis is accepted. It is inferred that there is a significant difference between the adjusted post-test means of the body mass Index (Kg/m²).

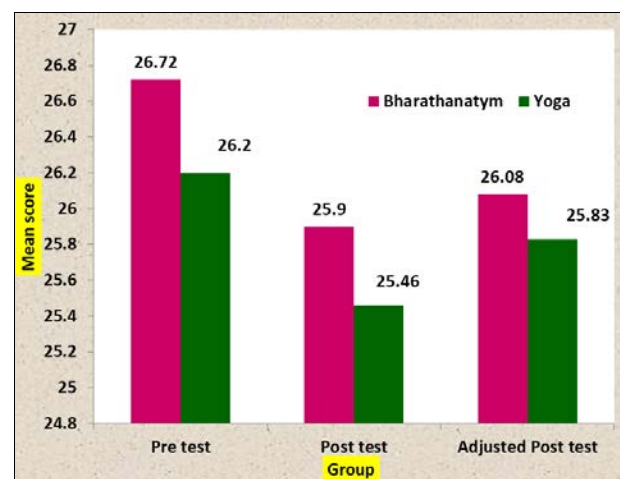


Fig 1: Analysis of co-variance of the pre-test and post-test means of the yoga and bharathanatym group in triglycerides

Table 2: Analysis of Co-Variance of the Pre Test and Post Test Means of the Bharathanatym and Yoga group in HDL (42-88 mg/dl)

Group	Bharathanatym	Yoga	Source of variance	Sum of squares	df	Mean square	'F' Ratio
Pre Test Mean	72.93	79.60	Between	23.941	1	23.941	0.344
SD	8.34	3.52	Within	1946.817	28	69.529	
Post- test Mean	74.72	81.72	Between	33.708	1	33.708	3.081
SD	8.33	3.07	Within	306.304	28	10.939	
Adjusted Post -test mean	73.82	80.66	Between	52.638	1	52.638	4.89
			Within	472.691	28	13.569	

S – Significant, NS – Not Significant

The 2 result proved that the pre-test mean score on Bharathanatym group is 72.93, Yoga group is 79.60. Therefore, it is observed that the obtained 'F' value 0.344 for Pre-Test mean score. Therefore the framed research hypothesis is rejected. It is inferred that there is no significant difference between the pre-test means of the HDL (42-88 mg/dl). Also, the Post-test mean score on Bharathanatym group is 74.72, Yoga group is 81.72. Therefore, it is evident that the obtained 'F' value 3.081 for Post-Test mean score.

Therefore the framed research hypothesis is accepted. Further, the above table taking into consideration of the adjusted post test mean score on Bharathanatym group is 73.82, yoga group is 80.66. Therefore, it is evident that the obtained 'F' value is 4.89. Therefore the framed research hypothesis is accepted. It is inferred that there is a significant difference between the adjusted post-test means of the HDL (42-88 mg/dl).

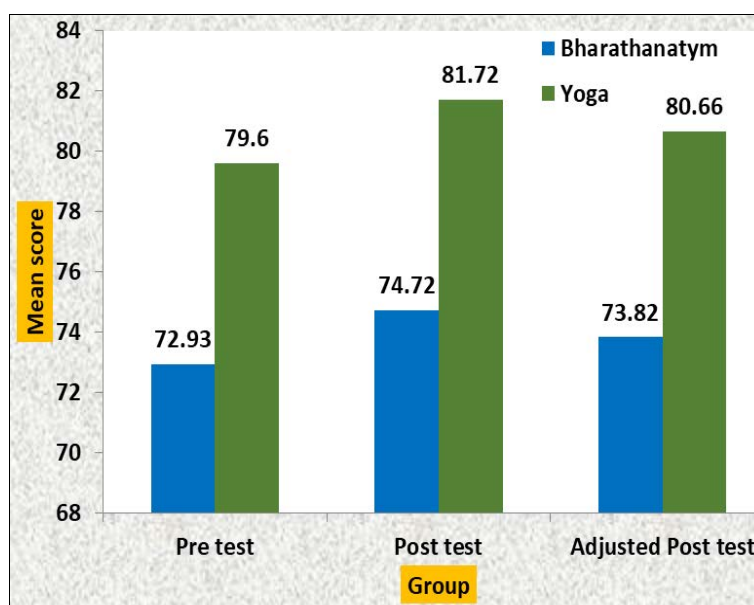


Fig 2: Analysis of Co-Variance of the Pre Test and Post Test Means of the Bharathanatym and Yoga group in HDL (42-88 mg/dl)

Table 3: Analysis of Co-Variance of the Pre Test and Post Test Means of the Bharathanatym and Yoga group in LDL (70-140 mg/dl)

Group	Bharathanatym	Yoga	Source of variance	Sum of squares	df	Mean square	'F' Ratio
Pre Test Mean	116.98	106.53	Between	74.892	1	74.892	0.621 NS
SD	11.15	11.70	Within	3374.637	28	120.523	
Post-test Mean	113.82	97.93	Between	555.044	1	555.044	3.02 S
SD	10.84	15.26	Within	5180.246	28	185.009	
Adjusted Post-test mean	115.40	102.23	Between	639.056	1	639.056	5.17 S
			Within	6184.732	28	589.730	

S – Significant, NS – Not Significant

From the 3 the statistical result shows that the pre-test mean score on Bharathanatym group is 116.98, Yoga group is 106.53. Therefore, it is observed that the obtained 'F' value 0.621 for Pre-Test mean score. Therefore the framed research hypothesis is rejected. It is inferred that there is no significant difference between the pre-test means of the LDL (70-140 mg/dl). Also, the Post-test mean score on Bharathanatym group is 113.82, Yoga group is 97.93. Therefore, it is evident that the obtained 'F' value 3.02 for Post-Test mean score.

Therefore the framed research hypothesis is accepted. Further, the above table taking into consideration of the adjusted post test mean score on Bharathanatym group is 115.40, yoga group is 102.23. Therefore, it is evident that the obtained 'F' value is 5.17. Therefore the framed research hypothesis is accepted. It is inferred that there is a significant difference between the adjusted post-test means of the LDL (70-140 mg/dl).

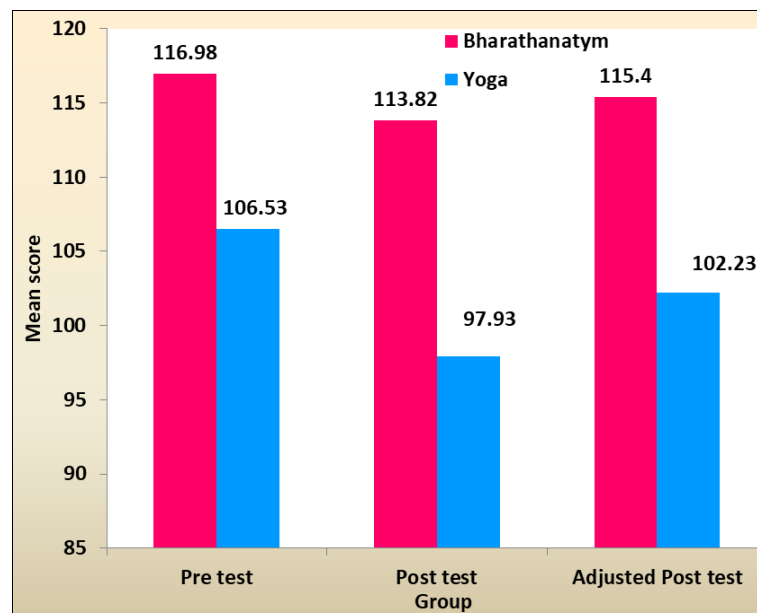


Fig 3: Analysis of Co-Variance of the Pre Test and Post Test Means of the Bharathanatym and Yoga group in LDL (70-140 mg/dl)

Discussions

Several studies have highlighted the beneficial effects of Yoga on cardiovascular health and lipid profiles. In a systematic review by Cramer *et al.* (2014) ^[1], it was found that regular practice of Yoga is associated with significant reductions in total cholesterol, triglycerides, and LDL cholesterol, while increasing HDL cholesterol levels.

In a study, The Effect of Yoga on the Lipid Profile: A Systematic Review and Meta-Analysis of Randomized Clinical Trials-Dorsa Ghazvineh *et al.* (2022) ^[2] conducted a systematic review and meta-analysis to assess the impact of yoga on lipid profiles, where the results indicate that Yoga interventions had a significant impact on lipid profiles.

In a study conducted by Nisha Shantakumari, *et al.* (2013) ^[3], upon completing the 3-month yoga intervention, the study group exhibited a reduction in total cholesterol, triglycerides, and LDL levels, along with an improvement in HDL levels.

The findings of the study by Roberto Wagner Júnior Freire de Freitas (2013) indicated a considerable proportion of students with elevated triglycerides, total cholesterol, and LDL cholesterol levels, while demonstrating decreased levels of HDL cholesterol.

Future Research: Suggestions for future research might include long-term follow-up studies, exploring the impact of combined yoga and Bharatanatyam interventions, and assessing the sustainability of improved lipid profiles. This proposed methodology provides a structured framework for investigating the impact of selected yogic practices and Bharatanatyam adavus on lipid profiles among overweight women, facilitating the collection of reliable data and the analysis of the intervention's effectiveness.

Conclusion

The primary objective of this research is to shed light on the effects of selected Yogic practices and specific Bharatanatyam adavus on the overall health of overweight women. Through a biochemical analysis utilizing the lipid profile as a tool, this study aims to uncover valuable findings. These findings could pave the way for integrating these traditional practices into a holistic approach for managing lipid imbalances and enhancing overall health in overweight individuals.

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