International Journal of Scientific Research in Science and Technology
Available online at : www.ijsrst.com
Print ISSN: 2395-6011 | Online ISSN: 2395-602X
doi : https://doi.org/10.32628/IJSRST52310457

Effect of Yoga on Participants of Certificate Teacher Training Course (Yoga) of East Ahmedabad City, India

Jayshree N Tolani[1], Nitin R. Thakor[2], Pravender[3]

[1]Statistician cum Tutor, Dept. of Community Medicine, NAMO Medical Education and Research Institute, Silvassa, Dadra Nagar Haveli and Diu & Daman, India

[2]Research Scholar, Dept. of Statistics, School of Sciences, Gujarat University, Ahmedabad, Gujarat, India

[3]Associate Professor, Dept. of Statistics, School of Sciences, Gujarat University, Ahmedabad, Gujarat, India

ARTICLEINFO

Article History:

Accepted: 01 Aug 2023
Published: 14 Aug 2023

Publication Issue

Volume 10, Issue 4
July-August-2023

Page Number

414-421

ABSTRACT

Yoga is recognized as a form of psychosomatic medicine that integrates a person's physical, mental and spiritual components to improve aspects of health, particularly stress-related ailments. It has been shown to contribute to chronic diseases such as heart disease, cancer and stroke.

MATERIALS AND METHODS: Convenient and purposive sampling was used to collect the data because the data was gathered during the COVID-19 second wave i.e. from February 2021 to May 2021. All the participants included in the study (89) were enrolled for YOG TRAINER PROGRAM under Gujarat Yog Board and practiced yoga daily from 5am to 7am regularly for 2 months. Oral consent was taken from the participant prior to that of data collection. Paired t test was used to calculate the significant difference between the before and after BMI's and WHR's of the participants.

RESULTS: Out of 89 participants around 70% participants were found with the visceral fat above normal range. 68 participants had BMI above normal range. 47 had waist hip ratio over normal range (> 0.85). 100% participants had abnormal (above normal) Body fat. 67 participants showed body age difference of 10+ years. Though the samples suffered from higher obesity 66%, 54% and 73% didn't showed any effects of depression, anxiety and stress respectively.

CONCLUSION: Regular practice of Yoga decreased participants visceral fat & body fat around 1-2 units/month. And weight around 2-4 kgs/month. Approximately 15% people normalized their body BMI and 20% normalized their WHR (waist hip ratio). 2 participants were able to overcome to regulate the thyroxine production and stop the regular thyroid medication.

KEYWORDS : Yoga, meditation, asanas, pranayama

I. INTRODUCTION

Yoga, an ancient practice that originated in India thousands of years ago, is a holistic discipline that seeks to integrate the physical, mental, and spiritual dimensions of an individual (1). Rooted in the belief that the mind and body are interconnected, yoga serves as a form of psychosomatic medicine that fosters overall well-being and enhances various aspects of health. With its origins deeply entwined in Indian traditions, yoga has garnered immense popularity worldwide as a transformative practice that promotes physical fitness, mental clarity, and spiritual enlightenment (2, 3, 6).

Yoga's roots can be traced back to ancient Indian texts, including the Vedas and the Upanishads, where it was introduced as a means to attain spiritual harmony and self-awareness. Over the centuries, the practice of yoga evolved, incorporating diverse styles, techniques, and philosophies. In recent times, yoga has garnered global attention due to its potential to holistically address the health needs of individuals in a fast-paced and stress-laden modern world (11).

Numerous studies have demonstrated the efficacy of yoga in promoting physical fitness and improving mental health. The integration of postures (asanas), breathing exercises (pranayama), and meditation techniques fosters a comprehensive approach to nurturing both the body and mind. Scientific research has supported the role of yoga in reducing stress, anxiety, and depression, ultimately leading to an enhanced sense of well-being (8-10).

Moreover, emerging evidence suggests that yoga may hold promise in the prevention and management of chronic diseases. As stress is recognized as a significant risk factor for various health conditions, including cardiovascular diseases, cancer, and stroke, the stress-reducing effects of yoga may play a pivotal role in mitigating the impact of these ailments on overall health (2-7).

The current research aims to investigate the effects of yoga on participants enrolled in the Certificate Teacher Training Course (Yoga) in the vibrant city of East Ahmedabad, India. This study seeks to understand the impact of regular yoga practice on the physical health, mental well-being, and overall quality of life of the participants. In particular, the research focuses on the potential of yoga in alleviating stress-related ailments and its implications for the management and prevention of chronic diseases, such as heart disease, cancer, and stroke.

Despite the growing interest in yoga as a complementary therapeutic approach, there remains a need for empirical research to explore its effects on diverse populations, particularly individuals engaged in intensive yoga training programs such as the Certificate Teacher Training Course (Yoga) participants in East Ahmedabad City, India.

Objectives:

The primary objective of this research is to assess the effect of regular yoga practice on the physical and mental well-being of participants enrolled in the Certificate Teacher Training Course (Yoga) in East Ahmedabad City, India. The specific aims of the study are as follows:

- To examine changes in participants' physical health parameters, including body composition, weight, and waist-hip ratio, before and after the two-month yoga intervention.
- To evaluate the impact of yoga on stress-related ailments, such as anxiety, depression, and overall stress levels, among the participants.
- To explore potential correlations between yoga practice and the prevention or management of chronic diseases, such as heart disease, cancer, and stroke.

By addressing these objectives, the research endeavors to shed light on the transformative potential of yoga as a multifaceted approach to improving physical and mental health and its

significance in promoting a healthier and more balanced lifestyle.

II. MATERIALS AND METHODS

Convenient and purposive sampling methods were employed to collect data between February and April 2021. The study included 89 participants who were enrolled in the Yog Trainer Program under the Gujarat Yog Board. These participants diligently practiced yoga daily from 5 am to 7 am for a duration of 2 months. Prior to data collection, informed verbal consent was obtained from each participant, ensuring their voluntary participation in the study.

Biomedical parameters, including BMIs, Body Fat, Visceral Fat, BMR (Basal Metabolic Rate), Body age, Waist Hip Ratio, Depression, Anxiety, and Stress levels, were measured using the Omron Karada Scan Body Composition Monitor HBF-375.

To assess the impact of the Yoga Teacher Training Course on these parameters, paired-t tests were employed to calculate the differences between the participants' measurements before initiation and after completion of the training course. This statistical analysis allowed for a direct comparison of the changes in the above-mentioned variables within each participant.

The utilization of paired-t tests is appropriate for this study design as it accounts for the paired nature of the data, where each participant serves as their own control, thus reducing potential confounding factors.

Overall, this statistical approach enables the evaluation of the efficacy of the Yoga Teacher Training Course in influencing the biomedical parameters of the participants, providing valuable insights into the potential benefits of yoga practice on various health-related outcomes.

Fig. I Normal and abnormal pre and post yoga training Body fat of trainers

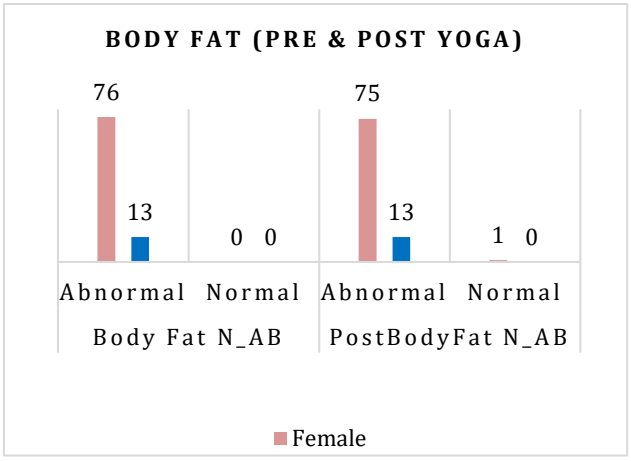

Fig. II Normal and abnormal pre and post yoga training Visceral fat of trainers

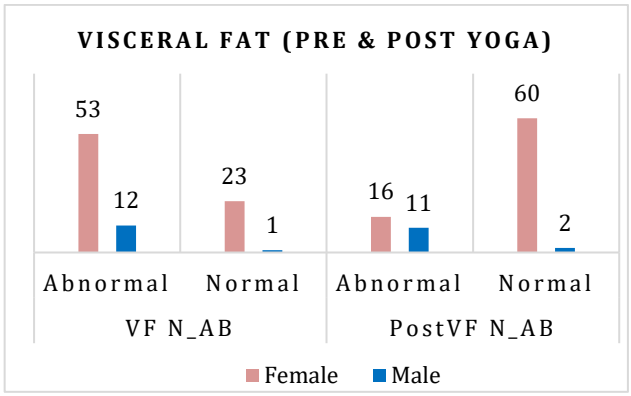

Fig. III Normal and abnormal pre and post yoga training BMI of trainers

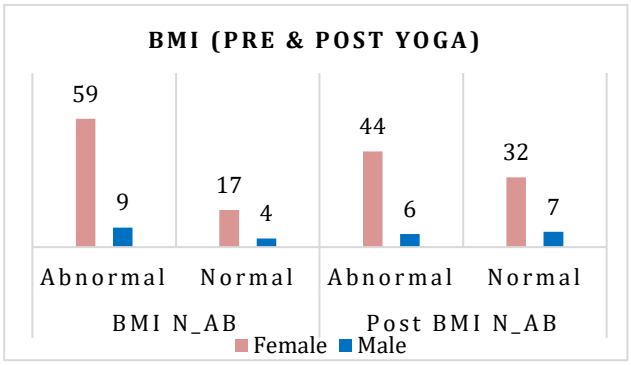

Fig. IV Normal and abnormal pre and post yoga training Waist Hip Ratio of trainers

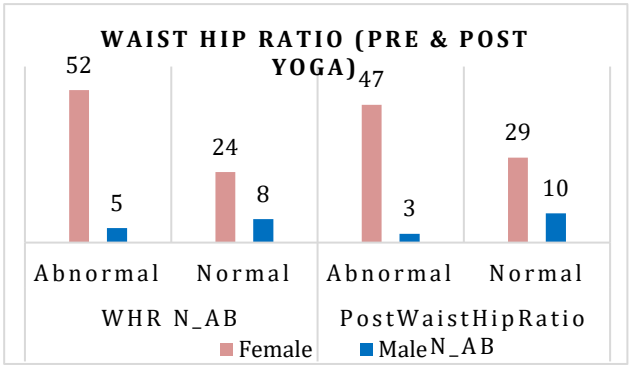

Table I : Mean Difference between Pre and Post Yoga Biomarkers

Paired Samples Test		Mean Difference	t	P-value
Pair 1	Pre Yoga Body Fat - Post Yoga Body Fat	2.065	13.090	0.000
Pair 2	Pre Yoga VF – Post Yoga VF	0.545	5.125	0.000
Pair 3	Pre Yoga BMR – Post Yoga BMR	138.618	54.235	0.000
Pair 4	Pre Yoga BMI – Post Yoga BMI	1.234	4.321	0.000
Pair 5	Pre Yoga Body Age - Post Yoga Body Age	2.157	5.413	0.000
Pair 6	Pre Yoga Waist Hip Ratio - Post Yoga Waist Hip Ratio	0.116	1.705	0.092
Pair 7	Pre Yoga Depression - Post Yoga Depression	0.326	3.869	0.000
Pair 8	Pre Yoga Anxiety - Post Yoga Anxiety	0.416	4.613	0.000
Pair 9	Pre Yoga Stress – Post Yoga Stress	0.382	4.401	0.000

Fig V : Correlation between actual age and body age measured using the Omron Karada Scan Body Composition Monitor HBF-375.

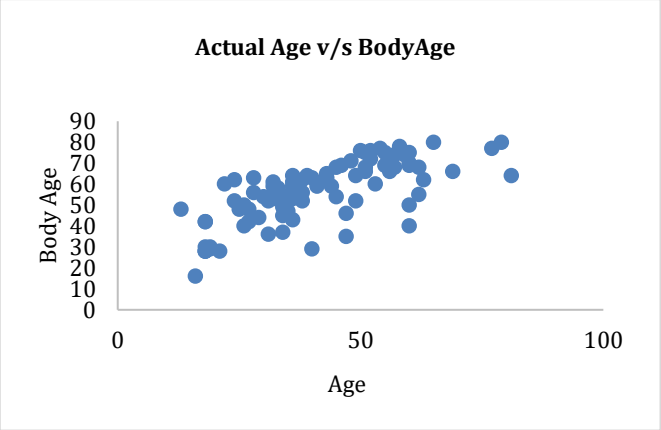

Table II: Correlation between actual age and body age measured using the Omron Karada Scan Body Composition Monitor HBF-375.

Pearson Correlation	Pearson Correlation	P-value
Age * Body Age	0.711	0.000

Table II shows Correlation of Actual age of the person and body age of that same person. Spearman's rho correlation was used to calculate the correlation as the variables used were scale parameters developed by different scientists. From table 2 it can be observed that as the actual age of the individual increases; his/her body age also increases at 5% level of significance.

Table III: Correlation between Pre Yoga Biomarkers and mental health Pre Yoga training of Yog trainers

Spearman's Correlations		Pre Yoga Body Fat	Pre Yoga VF	Pre Yoga BMI	Pre Yoga Body Age	Pre Yoga Waist Hip Ratio
Pre Yoga Depression	Corr. Coeff	0.190	0.069	0.129	0.155	-0.033
	P-value	0.074	0.523	0.227	0.147	0.757
Pre Yoga Anxiety	Corr. Coeff	0.116	0.110	0.117	0.107	-0.130
	P-value	0.278	0.305	0.274	0.318	0.224
Pre Yoga Stress	Corr. Coeff	0.124	0.075	0.090	0.071	-0.221*
	P-value	0.249	0.486	0.401	0.506	0.037

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table III shows correlation between Pre Yoga Biomarkers (body fat, visceral fat, BMI, difference between actual age and body age measured using the Omron Karada Scan Body Composition Monitor HBF-375) and mental health (depression, anxiety, stress) Pre Yoga training of Yogtrainers. Spearman's rho correlation was used to calculate the correlation as the variables used were scale parameters developed by different scientists. From table III it can be observed that neither depression nor anxiety showed any significant correlation with biomarkers before taking Yog Teacher training. While stress showed a significant negative correlation with waist hip ratio i.e. r = -0.221 with p-value 0.037.

Table IV: Correlation between Post Yoga Biomarkers and mental health Post Yoga training of Yog trainers

Spearman's Correlations		Post Yoga Body Fat	Post Yoga VF	Post Yoga BMI	Post Yoga Body Age	Post Yoga Waist Hip
Post Yoga Depression	Correlation Coefficient	0.086	0.023	0.160	0.123	-0.089
	P-value	0.420	0.828	0.134	0.251	0.408
Post Yoga Anxiety	Correlation Coefficient	0.047	0.061	0.120	0.118	-0.171
	P-value	0.663	0.569	0.262	0.272	0.109
Post Yoga Stress	Correlation Coefficient	0.003	-0.004	0.095	0.090	-0.293**
	P-value	0.979	0.972	0.377	0.402	0.005

**. Correlation is significant at the 0.01 level (2-tailed).

Table IV shows correlation between Post Yoga Biomarkers (body fat, visceral fat, BMI, difference between actual age and body age measured using the Omron Karada Scan Body Composition Monitor HBF-375) and mental health (depression, anxiety, stress) Post Yoga training of Yog trainers. Spearman's rho correlation was used to calculate the correlation as the variables used were scale parameters developed by different scientists. From table IV it can be observed that neither depression nor anxiety showed any significant correlation with biomarkers before taking Yog Teacher training. While stress showed a significant negative correlation with waist hip ratio i.e. r = -0.293 with p-value 0.005. It can also be said that the ability to reduce waist Hip Ratio increased after Yog Teacher training.

III. RESULTS

The study's findings unveiled significant insights into the health status of the participants. Notably, around 70% of the participants exhibited visceral fat levels that surpassed the normal range, and 68% had Body Mass Index (BMI) values exceeding the recommended range. Additionally, 47% of the participants presented with a waist-hip ratio (WHR) above the accepted limit of 0.85, signifying an elevated risk of obesity-related complications. Surprisingly, all participants, constituting 100% of the sample, displayed abnormal body fat levels above the normal range.

Moreover, a remarkable 67 participants demonstrated a body age discrepancy of 10 years or more, suggesting an accelerated aging process within the cohort.

Despite the higher prevalence of obesity within the sample group, a noteworthy proportion of participants, namely 66%, 54%, and 73%, did not manifest any indications of depression, anxiety, or stress, respectively. These results indicate that a substantial subset of participants experienced favorable psychological well-being despite their elevated obesity levels.

Overall, the data highlights the complex relationship between physical health indicators and psychological well-being among participants enrolled in the YOG Trainer Program, emphasizing the need for a comprehensive understanding of the multifaceted impact of yoga on health outcomes.

IV. Conclusion

The findings from this study provide compelling evidence supporting the effectiveness of regular yoga practice in enhancing body composition and overall health among participants of the Certificate Teacher Training Course (Yoga) in East Ahmedabad City, India. Over the two-month intervention period, significant reductions in both visceral and body fat were observed, occurring at an average rate of approximately 1-2 units per month. The participants also experienced an encouraging average weight loss of 2-4 kilograms per month.

Furthermore, the study revealed promising improvements in body mass index (BMI) and waist-hip ratio (WHR), with around 15% of the participants achieving normalized BMI values and 20% normalizing their waist-hip ratio. These outcomes suggest that consistent yoga practice can play a vital role in promoting healthy body weight and reducing the risk of obesity-related complications.

A particularly noteworthy observation was made in two participants who successfully regulated thyroxine production, allowing them to discontinue regular thyroid medication. This intriguing finding implies that yoga may hold therapeutic potential for certain endocrine conditions, encouraging further exploration of its application in endocrine health management.

The implications of this research contribute to the mounting body of scientific literature supporting yoga as a beneficial intervention for promoting both physical and mental well-being. The integration of yoga practices, such as meditation, asanas (physical postures), and pranayama (breathing exercises), into routine healthcare approaches is recommended to address stress-related ailments and enhance overall health outcomes.

The study's comprehensive approach sheds light on the multifaceted benefits of yoga, encompassing not only physical improvements but also the potential to alleviate psychological distress. Despite a higher

prevalence of obesity within the sample group, a significant proportion of participants did not exhibit signs of depression, anxiety, or stress, suggesting a positive impact on mental well-being.

In conclusion, this research underscores the importance of incorporating yoga practices as a complementary and holistic approach to promoting health and well-being. The encouraging results from this study provide impetus for healthcare professionals and policymakers to consider integrating yoga into wellness programs to help individuals achieve improved physical health and emotional balance. However, further research is warranted to elucidate the mechanisms underlying yoga's therapeutic effects and to assess its long-term impact on various health conditions. Overall, the study contributes valuable evidence to support yoga's role in enhancing the overall quality of life for individuals seeking to achieve optimal health and wellness.

V. RECOMMENDATION

It is recommended that the practice of Yoga be incorporated into our daily routines, as its positive impact on achieving complete physical, mental, and social wellbeing has been well-documented. In order to promote the significance of Yoga, it is essential to advocate for its adoption through well-designed awareness programs. These programs can play a crucial role in disseminating knowledge about the benefits of Yoga and encouraging individuals to embrace it as a holistic approach to enhancing their overall health and quality of life. By actively promoting the integration of Yoga into daily life through targeted awareness initiatives, we can foster a culture of wellness and mindfulness, leading to improved physical fitness, mental clarity, and strengthened social connections. The scientific evidence supporting the manifold benefits of Yoga makes it a valuable addition to public health initiatives and wellness campaigns aimed at promoting comprehensive wellbeing in our communities.

VI. REFERENCES

[1]. White, David Gordon (2011). "Yoga, Brief History of an Idea" (PDF). Yoga in Practice. Princeton University Press. pp. 1–23.

[2]. Dwivedi S., Tyagi P. (2016). Yogaas a healthpromotionlifestyletool. Indian J. Med. Special. 7 29–34. 10.1016/j.injms.2016.01.001 [CrossRef] [Google Scholar]

[3]. Raub J. A. (2002). Psychophysiologic effects of Hatha Yoga on musculoskeletal and cardiopulmonary function: a literature review. J. Altern. Complement. Med. 8 797–812. 10.1089/10755530260511810 [PubMed] [CrossRef] [Google Scholar]

[4]. Ross A., Thomas S. (2010). The healthbenefits of yoga and exercise: a review of comparisonstudies. J. Altern. Complement. Med. 16 3–12. 10.1089/acm.2009.0044 [PubMed] [CrossRef] [Google Scholar]

[5]. Roland K. P., Jakobi J. M., Jones G. R. (2011). Does yoga engenderfitness in olderadults? A critical review. J. Aging Phys. Act. 19 62–79. 10.1123/japa.19.1.62 [PubMed] [CrossRef] [Google Scholar] [Ref list]

[6]. Büssing A., Michalsen A., Khalsa S. B. S., Telles S., Sherman K. J. (2012b). Effects of yogaonmental and physicalhealth: a shortsummary of reviews. Evidence Based Complement. Alternat. Med. ECAM 2012:165410. 10.1155/2012/165410 [PMC free article] [PubMed] [CrossRef] [Google Scholar] [Ref list]

[7]. Bhavanani A. (2013). Yoga Chikitsa: Application of Yogaas a Therapy. London: Dhivyananda Creation. [Google Scholar] [Ref list]

[8]. Devereux G. (1994). The Elements of Yoga. Rockport, MA: Element Books Ltd. [Google Scholar] [Ref list]

[9]. Park C. L., Elwy A. R., Maiya M., Sarkin A. J., Riley K. E., Eisen S. V., et al. (2018). The essential properties of yoga questionnaire (EPYQ): psychometric properties. Int. J. Yoga Ther. 28 23–38. 10.17761/2018-00016R2 [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[10]. Csala B., Ferentzi E., Tihanyi B. T., Drew R., Köteles F. (2020). Verbal cuing is notthepathto enlightenment. Psychological effects of a 10-session hathayoga practice. Front. Psychol. 11:1375. 10.3389/fpsyg.2020.01375 [PMC free article] [PubMed] [CrossRef] [Google Scholar] [Ref list]

[11]. Csala, B., Springinsfeld, C. M., &Köteles, F. (2021). The relationship between yoga and spirituality: a systematic review of empirical research. Frontiers in Psychology, 12, 695939.

Cite this article as :

Jayshree N Tolani, Nitin R. Thakor, Pravender, "Effect of Yoga on Participants of Certificate Teacher Training Course (Yoga) of East Ahmedabad City, India", International Journal of Scientific Research in Science and Technology (IJSRST), Online ISSN : 2395-602X, Print ISSN : 2395-6011, Volume 10 Issue 4, pp. 414-421, July-August 2023. Available at doi : https://doi.org/10.32628/IJSRST52310457
Journal URL : https://ijsrst.com/IJSRST52310457