

Impact Of Yoga Therapy On 6 Minute Walk Test Among Middle Aged Men Diagnosed with Varicose Veins

*K. Badri, **Dr. V. Subbulakshmi,

*Full-Time PhD Scholar in Yoga Science, Faculty of Yoga Science and Therapy, Meenakshi Academy of Higher Education and Research, No.12, Vembuliamman Koil Street, West K.K.Nagar, Chennai-78, Tamil Nadu, India.

E- Mail ID: gccbadri12@gmail.com

** Professor, Faculty of Yoga Science and Therapy, Meenakshi Academy of Higher Education and Research, No.12, Vembuliamman Koil Street, West K.K.Nagar, Chennai-78, Tamil Nadu, India.

E-Mail ID: vaslakshmi321@yahoo.com

ABSTRACT

The purpose of the randomized, parallel group, active controlled trail experimental study was to find out the impact of yogic therapy on 6 minute walk test among middle aged men diagnosed with varicose veins. Totally 20 varicose veins middle aged men were selected from Chennai and they were divided into two groups I and II with 10 subjects each. It was hypothesized that there would be any effectiveness among the varicose veins middle aged men on 6 minute-walk test. Preliminary test was taken for two Groups on 6 minute-walk test before the start of the training program. Group I subject were given Yoga therapy practices for 60 minutes, three days a week for a total period of twelve weeks. Group II (Control Group) subjects were in active rest. After the experimental period, the two groups were retested again on the same selected dependent variables. Paired 't' test was used to find out the effectiveness between the experimental group and the control group. The test of significance was fixed at 0.05 level of confidence. The results of the study proved that the Experimental Group showed that intensify in distance on 6 minute-walk test (increased) than the Control Group due to Yoga therapy among Varicose veins middle aged men. The hypothesis was accepted at 0.05 level of confidence. Hence it is concluded that Yoga therapy is beneficial for varicose veins men to maintain proper walking pattern.

KEYWORDS: Yoga Therapy, 6 minute-walk test (6MWT), Middle aged men, Varicose Veins.

INTRODUCTION

Chronic venous diseases (CVD) are conditions that arise as a result of venous hypertension induced by valve insufficiency and/or venous flow restriction, and in which venous system function is reduced (**Erdal ES et. al. 2021**). Yoga and Ayurveda are old Indian traditional systems. Yoga adheres to Ayurvedic teachings. Vagbhata describes the symptoms of "varicose veins" induced by vata, which develop as a result of Vata dosha activation. Treatment for varicose veins can be found in ancient Indian books such as Astanga Hrdaya and Charaka Samhitha (**Zulpe R, Sharma KK 2023**). Yoga for varicose veins is a methodical technique to comprehensive physical, mental, and emotional relaxation. Yoga for varicose veins can help restore vein suppleness, strengthen leg muscles, and enhance the muscular force required to pump blood towards the heart.

OBJECTIVE OF THE STUDY

The objective of the research is to determine the effectiveness of yoga therapy on selected physical variable due to the influence of yoga therapy on the 6-minute walk test in middle-aged men with varicose veins.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the impact of yoga therapy on 6 minute walk test among middle aged men diagnosed with varicose veins.

HYPOTHESIS

It was hypothesized that there would be significant differences on 6 minute walk test among middle aged men diagnosed with varicose veins due to yoga therapy than the control group.

INCLUSION CRITERIA

1. Willingness to participate in the study and signing in the written consent form.
2. Those diagnosed with varicose veins based on CEAP classification, symptoms C2.
3. Middle aged men with Varicose Veins.
4. No history of practicing yoga or other exercises.
5. Assessed suitable for practicing yoga therapy based on physical exam.

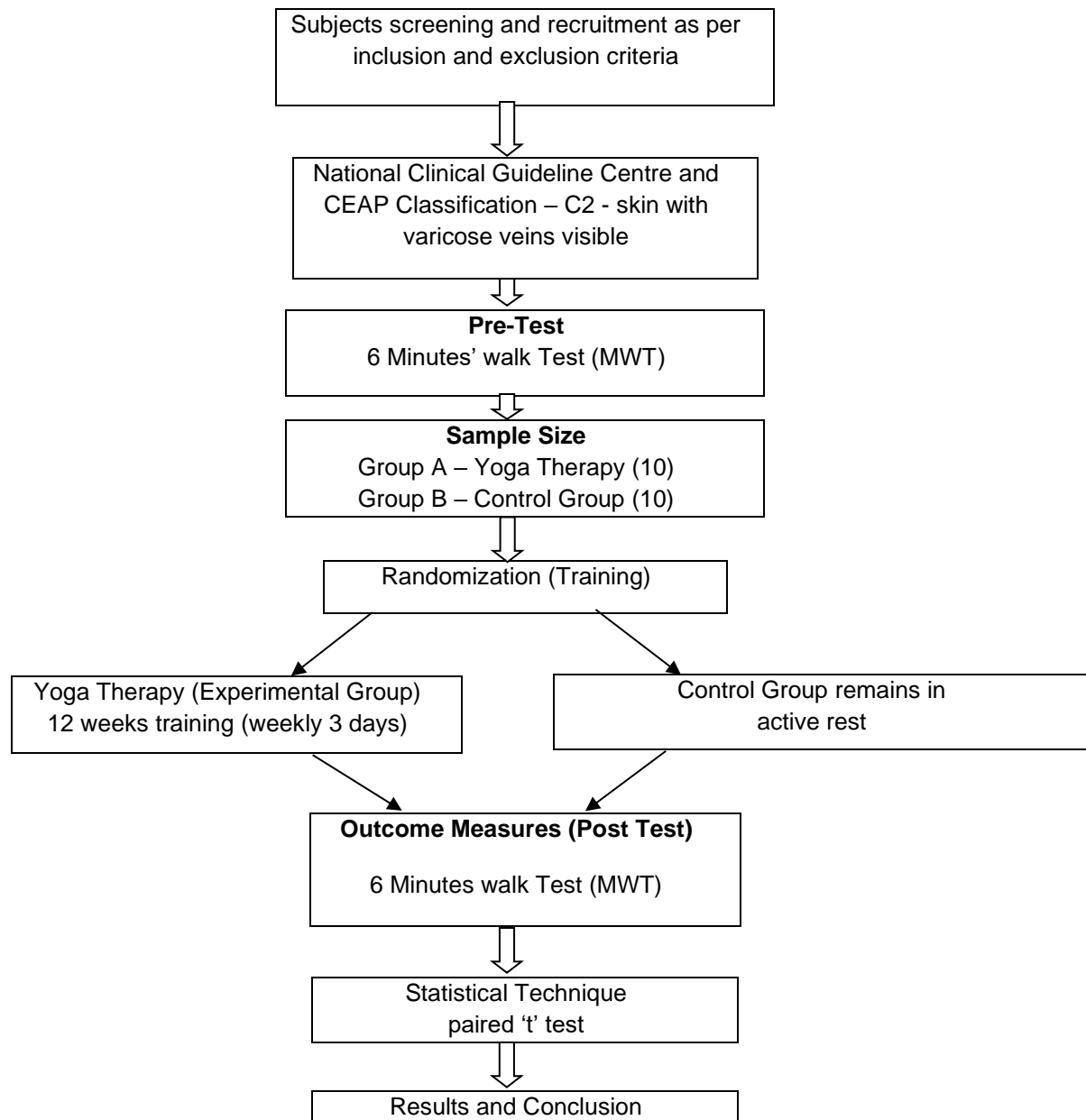
EXCLUSION CRITERIA

1. Active clinical surgery or other major clinically Significant disorder/ disease.
2. Blood clotting disorders.
3. Patients on prolonged anti-coagulant drugs.
4. Person suffering with High Blood Pressure.

METHODS AND DESIGN

The effect of yoga therapy on the 6-minute walk test in middle-aged men diagnosed with varicose veins was a randomized, active-controlled, parallel-group trail. According to the National Center for Clinical Guidelines and his CEAP (Clinical, Etiological, Anatomical, and Pathophysiological) Classification of Varicose Veins (2004): Skin with visible varicose veins (C2) is selected for study. The target audience is middle-aged men. All subjects will be informed of the purpose and nature of the study and will obtain written consent prior to data collection. The total number of samples is set to 20. Based on the information received, subjects were divided into two groups. Yoga therapy group (10 people) and a Control group (10 people). The dependent variable is the 6-minute walking test (6MWT). Pretest and posttest were performed for all outcome measures for all selected samples. Subjects were trained in yoga therapy three days a week for three months, with sessions lasting 60 minutes. The control group were in active rest.

CONSORT FLOW DIAGRAM



RESULTS AND DISCUSSIONS

- The data pertaining to the variable collected from the two groups before and after the training period were statistically analyzed by using paired 't' test to determine the significant difference and the hypothesis was tested at 0.05 level of confidence.
- These are shown in the Tables below.

TABLE: 1
COMPUTATION OF MEAN, STANDARD DEVIATION AND INDEPENDENT T TEST FOR YOGA THERAPY GROUP AND CONTROL GROUP ON PRE AND POST TEST

VARIABLES	PRE TEST			POST TEST		
	Yoga Therapy Group	Control Group	Independent 't' Test	Yoga Therapy Group	Control Group	Independent 't' Test
	Mean And Standard Deviation	Mean And Standard Deviation	P Value	Mean And Standard Deviation	Mean And Standard Deviation	P Value
6 MINUTE WALK TEST	280.4	275.5	T=1.27	377.2	271.9	T=23.83
	9.03	8.07	P=.108	11.2	8.34	P<.001

***Significant at 0.05 level of confidence**

The above table shows the results of "t" test of intervention groups for 6 minute walk test among middle aged men diagnosed with varicose veins. In the case of Pretest and Post test (Experimental Group), pre test of yoga therapy group and control group shows no statically significant difference among them whereas post test of yoga therapy group shows statically significant than the post test of control group. The post test of yoga therapy group have improved than the control group. Hence, it is concluded that, there is a significant large difference between the Pre-test and Post-test for 6 minute walk test among experimental group.

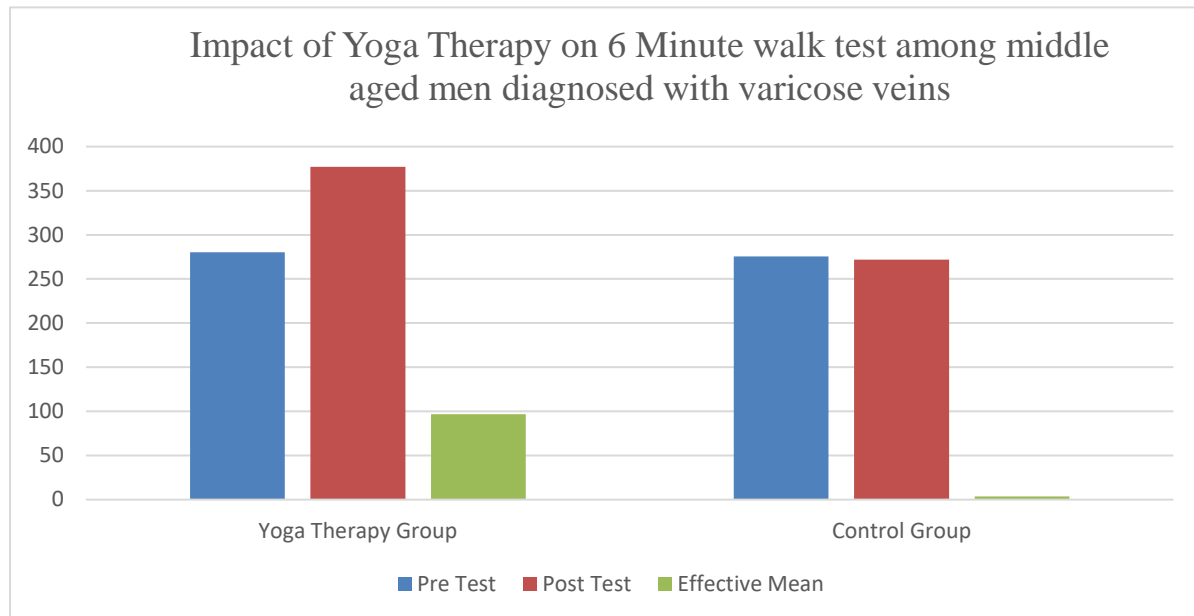
TABLE II:
EFFECTIVENESS OF YOGA THERAPY BETWEEN THE YOGA THERAPY GROUP AND THE CONTROL GROUP ON PAIRED 't' TEST AND INDEPENDENT 't' TEST

VARIABLES	YOGA THERAPY GROUP		CONTROL GROUP	
	Effective mean +SD	Paired t test T Value P Value	Effective mean +SD	Paired t test T Value P Value
6 MINUTE WALK TEST	96.8	T=25.1	3.6	1.3
	12.21	P<0.001	8.68	0.222

***Significant at 0.05 level of confidence**

The effectiveness of the yoga therapy on 6 minute walk test between yoga therapy group (M=96.8, SD=12.21) and the control group (M=3.6, SD=8.68) shows that the t-value for yoga therapy group is 25.1, p value p<0.001 and for control group t value is 1.3, p value is 0.222. This show that here is a significant difference. Hence, it is proved that yoga therapy group improve the walking pattern and distance among middle aged men diagnosed with varicose veins.

BAR GRAPH



DISCUSSION ON HYPOTHESIS:

It was hypothesized that there would be significant difference in the 6 minute walk test due to the influence of yoga therapy group than the control group among varicose veins. The results of the study indicated that there was a significantly difference in 6 minute walk test (Increased) due to the yoga therapy group than the control group. Hence, hypothesis was accepted at 0.05 level of confidence.

CONCLUSION

It was concluded that there will be significant differences on 6 minute walk test was (Increased) among experimental group I compared to control group due to Yoga therapy among middle aged men diagnosed with varicose veins. Hence, Yoga therapy is good for varicose veins men to maintain walking pattern in daily life.

DECLARATIONS

Ethical Considerations

We complied with ethical standards. The trial has been reviewed and approved by the institutional ethics committee (IEC) of Meenakshi Academy of Higher Education and Research (Deemed to be University) in the committee meeting held on 20th February 2022. The institutional ethics committee clearance certificate reference number is MMCH/RI/PhD/01/JAN/23. The trial has been registered in the Clinical Trials Registry-India (CTRI). The registration number for the trial is CTRI/2023/05/052928.

Consent to publish

All authors agreed to the content of the final paper.

Funding

This research was conducted with personal funding, with no external sponsorship or financial support.

Competing Interest

No potential conflict of interest was reported by the authors.

Acknowledgement

The author would be like to appreciate the technical support staff of Faculty of Yoga Science and Therapy, Meenakshi Academy of Higher Education and Research for their help throughout the project.

REFERENCE

1. Bennell K, Dobson F, Hinman R. Measures of physical performance assessments: Self-Paced Walk Test (SPWT), Stair Climb Test (SCT), Six-Minute Walk Test (6MWT), Chair Stand Test (CST), Timed Up & Go (TUG), Sock Test, Lift and Carry Test (LCT), and Car Task. *Arthritis Care Res (Hoboken)*. 2011 Nov;63 Suppl 11:S350-70. doi: 10.1002/acr.20538. PMID: 22588756.
2. Erdal ES, Demirgüç A, Kabalcı M, Demirtaş H. Evaluation of physical activity level and exercise capacity in patients with varicose veins and chronic venous insufficiency. *Phlebology*. 2021;36(8):636-643. doi:10.1177/02683555211002339.
3. Erdal ES, Demirgüç A, Kabalcı M, Demirtaş H. Evaluation of physical activity level and exercise capacity in patients with varicose veins and chronic venous insufficiency. *Phlebology*. 2021;36(8):636-643. doi:10.1177/02683555211002339
4. Joseph N, B A, Faizan Thouseef M, Devi M U, Abna A, Juneja I. A multicenter review of epidemiology and management of varicose veins for national guidance. *Ann Med Surg (Lond)*. 2016 Apr 30;8:21-7. doi: 10.1016/j.amsu.2016.04.024. PMID: 27257482; PMCID: PMC4878844.
5. SRB'S MANUAL OF SURGERY, Sriram Bhat M, Foreword Prakesh Rao, 2009
6. Tüchsen, F., Krause, N., Hannerz, H., Burr, H., & Kristensen, T.S. (2000). Standing at work and varicose veins. *Scandinavian journal of work, environment & health*, 26 5, 414-20 .
7. Waters, Thomas R. PhD1; Dick, Robert B. PhD1. Evidence of Health Risks Associated with Prolonged Standing at Work and Intervention Effectiveness. *Rehabilitation Nursing Journal* 40(3):p 148-165, May 2015. | DOI: 10.1002/rnj.166
8. Zulpe R, Sharma KK. A study of the Effect of Yogic Interventions on Varicose Veins. *JDDT* [Internet]. 15Jan.2023 [cited 8Aug.2023];13(1):X1-X4. Available from: <https://jddtonline.info/index.php/jddt/article/view/5911>