

A Cross Sectional Study on Prevalence of Varicose Vein and its Related Hazard Factors among School Teachers in Chennai, Tamil Nadu

Savithri K. B¹, Raj Rani²

¹Research Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India

²Research Supervisor, Himalayan University, Itanagar, Arunachal Pradesh, India

Abstract: *Background:* Varicose veins are chronic venous disorder described as enlarged, twisted, superficial veins caused by incompetent venous valves. It affects the lower limbs. *Aim:* To determine the prevalence of varicose veins and associated risk factors among schoolteachers in Chennai. *Material and Method:* Descriptive - cross sectional research design had been used. Data was collected from 280 teachers from 8-07-2017 to 24-11-2017 using self-structured questionnaire related demographic data, and risk factors. The second tool Venous Insufficiency Epidemiological and Economic Study – symptoms (VEINES- Sym) questionnaire. Data was analyzed using descriptive and inferential statistics. *Results:* Prevalence of varicose veins among secondary schoolteachers was 24.6%, 62.5% of them are females while 37.5% are males. *Conclusion:* Varicose veins were widely among schoolteachers. Health education program is very useful to prevent varicose veins and its complications.

Keywords: Prevalence, Varicose Veins, risk factors & Teachers.

1. Introduction

The teachers are the central mainstays of a propelled society. They answerable for the educating and along with guardians; they are the primary wellspring of information and ethics for children¹. Varicose veins (VV) are common chronic condition; they have been shown to adversely effects on patients' quality of life and major cause of morbidity as varicose veins can cause assortment of manifestations extending from tingling to ulceration².

Varicose veins are asymptomatic, and the patient's complaint purely cosmetic. At the point when indications happen, they are frequently portrayed as greatness, hurting, tingling, growing, eagerness and cramps³.

There are several risk factors increment an individual's odds of creating varicose veins, which include: innate, female gender, expanding age, weight, delayed standing, pregnancy, history of leg injury or DVT⁴. Management options for varicose veins consist of conservative management, external laser treatment, injection sclerotherapy, endogenous interventions, and surgery^{5,6}. Some self-care gauges that can help in the anticipation are practicing routinely, keeping up a sound body weight and so on⁷.

There is a need to educate the teachers regarding this condition in order to prevent it. Hence the investigator motivated to take up the present study to find out the prevalence and risk factors of varicose veins to prevent its complication

2. Material & Methods

Study participants

A descriptive cross –sectional study was conducted among schoolteachers in Chennai. A total of 280 participants participated in the study. A composed educated assent was

gotten from every member and guaranteed them that, privacy of the considerable number of information will be kept up.

Data Collection Procedure

Structured self-administered questionnaire was developed through a review of the literatures. It consisted of demographic data, risk factors and VV scale. Demographic data consists of Age, gender, education, marital status, years of experience and BMI. Risk factors such as age, gender, smoking...etc. Venous Insufficiency Epidemiological and Economic Study – symptoms (VEINES/ Sym) questionnaire used to assess symptoms of varicose veins

The VEINES /Sym comprises of ten items which are related with the side effects of VV. The time considered for questions identified with indications covers the last four weeks⁷. The score delivered by VEINES-Sym incorporates ten things related with the accompanying side effects: substantial legs, sore legs, expanding, night issues, warmth or consuming sensation, anxious legs, pulsating, tingling and deadness and are evaluated by a five-point Likert scale. Higher scores demonstrate better outcomes^{7,8}.

Data Management and Analysis

Data were entered into Epi-data 3.1 software and then exported to SPSS (Statistical Package for Social Sciences) version 20 for analysis. Descriptive statistics were calculated through cross-tabulation.

3. Results

Frequency and percentage distribution of demographic Variables, N=260

S.No.	Variables	No	%
1	Age in years		
	<30	82	29.2
	30-40	116	41.4
	40-50	68	24.4
	>50	14	5
2	Gender		
	Male	147	52.6
	Female	133	47.4
3	Education		
	Graduate	151	53.8
	Postgraduate	129	46.2
4	Marital Status		
	Unmarried	22	7.8
	Married	246	88
	Widow/widower	12	4.2
5	Years of experience		
	<10	63	24.4
	Oct-20	46	17.6
	>20	151	58
6	Body Mass Index		
	Normal weight	73	28
	Overweight	108	41.6
	Obese	79	30.4
7	No. of class per day		
	<3	84	36
	3-5	104	40
	>5	88	34
8	Positions used while taking class		
	Standing	155	59.8
	Sitting	86	33
	Walking	19	7.2

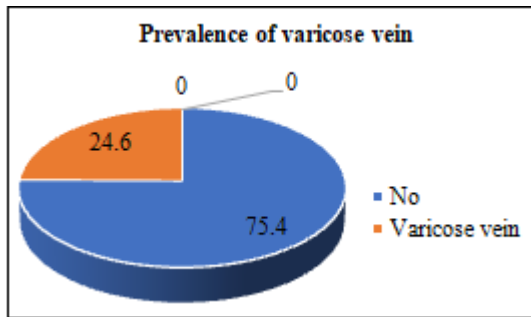


Table 2: Risk factors for varicose veins among study subjects

Risk Factors	Odds ratio	C. I. (95%)	P value
Family history	3.83	2.37-5.22	0.045*
Pregnancy	1.92	1.66-2.70	0.047*
Prolonged sitting	1.74	1.11-2.45	0.046*
Prolonged standing	1.68	0.84-2.66	0.033*
Hypertension	1.74	0.88-1.54	0.004*
Leg trauma	4.54	1.93-5.92	0.045*
Wearing tight clothes	1.05	1.05-1.09	0.031*
Wearing high heel shoes	2.83	1.18-3.85	0.033*
Smoking	1.55	0.73-1.85	0.143
Lack of Exercise	3.34	1.96-3.82	0.027*
Diabetes Mellitus	3.85	2.25-6.86	0.053
Oral Contraceptives Use	7.44	4.02-15.34	0.026*

Table 3: Association between varicose veins and selected demographic variables among school teachers, N=260

Variables	With Varicose Veins		Without Varicose veins		P. value
	No (64)	%	No (196)	%	
Age in years					
<30	12	18.00%	64	33.00%	0.000**
30-40	34	54.00%	73	37.00%	
40-50	10	15.00%	55	28.00%	
>50	8	13.00%	4	2.00%	
Gender					
Male	24	38.00%	113	57.80%	0.006**
Female	40	63.00%	83	42.20%	
Education					
Graduate	19	30.00%	102	51.90%	<0.001**
Postgraduate	45	70.00%	94	48.10%	
Marital status					
Unmarried	2	3.00%	18	9.40%	0.072
Married	21	33.00%	170	86.60%	
Widow/Widower	41	64.00%	8	4.00%	
Years of Experience					
<10	7	11.70%	57	29.00%	<0.001**
Oct-20	16	24.20%	29	15.00%	
>20	41	64.10%	110	56.00%	
BMI					
Normal Weight	8	12.00%	65	33.60%	<0.001**
Overweight	18	28.00%	91	46.20%	
Obese	38	60.00%	40	20.20%	
No. of class per day					
<3	32	33.84	69	35	0.001**
3-5	31	33	61	31	
>5	31	33.16	66	34	
Positions used while taking class					
Standing	56	59.8	117	59.8	0.001**
Sitting	31	33	65	33	
Walking	7	7.2	14	7.2	

Table (1): Showed that 41.4 % of teachers aged 30- 40 years, 52.6% were females, 53.8% were undergraduate, and 88.0% were married. Regarding years of experience 58.0% of them were had more than 20 years, 41.6% were overweight. Also, this table revealed that 41% of teachers had 3-5hrs of class per day, and 59.8% of them used standing position while taking class.

Figure (1): Showed that (24.6%) studied teachers had varicose veins.

Table (2): Show that there is statistically significant relationship between varicose veins and risk factor Family history (OR 3.83, p=0.045), prolonged sitting (OR 1.74, p=0.046), prolonged standing (OR 1.68, p=0.033), leg trauma (OR 4.54, p=0.045), and hypertension (OR 7.44, p=0.026), in both sexes. In females, number of pregnancies (OR 1.92, p=0.047), use of contraceptives (OR 7.44, p=0.026), Wearing tight clothes (OR 1.05, p=0.031), Wearing tight clothes (OR 2.83, p=0.033), and lack of exercises (OR 3.34, p=0.027), significant with the presence of varicose veins and not with smoking & Diabetes mellitus.

Table (3): Showed that there was a statistical significant association between varicose veins and selected

demographic variables age, female gender, education, years of experience and BMI, and not with marital status.

4. Discussion

Varicose veins can negatively affect the lives of the affected people, who usually stand for long periods on their feet especially the surgeons, nursing staff, traffic worker and teachers¹. The findings of this study revealed that mean age of studied sample was 45.11 ± 9.09 and 41.4% of participants age ranged from 35- 44 years. These findings are consistent with a study about prevalence^{9, 10}.

According to gender, the present study illustrated that more than half of studied sample were females, while less than half of them were males^{2, 11}. Regarding Body Mass Index (BMI), the findings demonstrated that more than two thirds of studied sample were obese and regarding the years of experience, the results of this study showed that more than half of the studied sample have more than 20 years of experience^{12, 13}. The current study showed the relationship of varicose vein with risk factors such as family history, pregnancies, leg trauma, lack of exercises, use of contraceptives, long standing & sitting, wearing tight clothes and high heel shoes^{13, 14, 15}.

The findings of this study demonstrated that there was a statistically significant association between varicose veins and age, female gender, education, years of experience and BMI, however there was no statistically significant relationship between varicose veins and marital status^{15, 16}.

5. Conclusion

Based on the present study findings, it was concluded that Varicose veins are common among schoolteachers. It's more common in ladies than men. Gender, age, experience, BMI, family ancestry, physical activities, and representing significant stretches are viewed as hazard variables of varicose veins. Wellbeing instruction projects ought to be executed to forestall varicose vein and its consequences.

6. Recommendation

- 1) The Present study was conduct on a more extensive study on large sample is recommended for wider generalization.
- 2) Health education programs should be implemented for increasing awareness of teachers to prevent varicose vein and its consequences.

Limitation: The following points were beyond the control of the investigator while collecting data some of them were on leave

7. Acknowledgement

I express my gratitude and thanks towards all who have directly or indirectly helped me to complete this study and their support in each major step of the study.

Source of funding: The authors did not receive any financial support from any third party related to the submitted work.

Conflict of interest: The authors had no relationship/ condition/ circumstances that present a potential conflict of interest.

Ethical Standards: This study was conducted after getting approval from the Institutional Ethics Committee and after obtaining written consents from all subjects

References

- [1] Barnes A., et al (2014): *Effectiveness of Self-Instructional Module (SIM) on Knowledge regarding the Prevention and Management of Varicose Veins among \Asian Journal of Nursing Education and Research*, V. 4(4), 452.
- [2] Onida S., & Davies A., (2013): *Varicose veins: diagnosis and management*. Nursing Times; 109: 41, 16-17.
- [3] Vaidyanathan S., (2015): *Chronic Venous Disorders: Classification, Severity Assessment, and Nomenclature*. In *Chronic Venous Disorders of the Lower Limbs* (pp. 25-32). Springer India
- [4] Williams N., et al (2013): *Bailey & Love's Short Practice of Surgery* 26E. Crc Press. Pp. 910: 922.
- [5] World Health Organization (WHO). (2015): *World Health Organization. Obesity and overweight*. Fact sheet N 311 2015 [updated January 2015].
- [6] Feliciano B., & Dalsing M., (2011): *Varicose vein: current management*. *Advances in surgery*, v 45(1), Pp 45- 62.
- [7] Migdalski Ł., & Kuzdak K., (2015): *The Use of The VEINES-QOL/Sym Questionnaire In Patients Operated For Varicose Veins*. *Polish Journal of Surgery*, v 87(10), Pp 491-498.
- [8] Méan M., Limacher A., Kahn S., & Aujesky D., (2014): *The VEINES-QOL/Sym questionnaire is a reliable and valid disease specific quality of life measure for deep vein thrombosis in elderly patients*. *Quality of life research*, v 23(9), Pp 2463-2471.
- [9] Shammeri et al (2014): *Chronic Venous Insufficiency: prevalence and effect of compression stockings*. *International journal of health sciences*, v 8(3), Pp 231.
- [10] Abramson JH, Hopp C, Epstein LM. *The epidemiology of varicose veins: a survey* *J Epidemiol Community Health*. 1981;35:213-7.
- [11] Brunner & Siddhartha's *Textbook of Medical-Surgical Nursing* (13th ed.), Assessment and management of patients with vascular disorders chapter 30, pp.1807-1810
- [12] Robertson L., (2013): *Incidence of varicose veins and associated risk factors*: [https://www.era.lib.ed.ac.uk/bitstream/1842/8149/ 2/ Robertson 2013](https://www.era.lib.ed.ac.uk/bitstream/1842/8149/2/Robertson2013).
- [13] Chen C., & Guo H., (2014): *Varicose veins in hairdressers and associated risk factors: a cross sectional study*. *BMC public health*, v 14(1), P 885.
- [14] Maffei FH, et al. *Varicose veins and chronic venous insufficiency in Brazil: prevalence among 1755*

inhabitants of a country town. Int J Epidemiol. 1986; 15:210-7.

- [15] Syrigos K., et al(2013): *Prevalence, risk and aggravating factors of chronic venous disease: an epidemiological survey of the general population.* Phlebology.; v 28(4): Pp 184–90
- [16] Vipul Agarwal et al (2016) *Prevalence and risk factors of varicose veins, skin trophic changes and venous symptoms* , International Journal of Research in Medical Sciences Agarwal V et al. Int J Res Med Sci. 2016 May;4(5):1678-1682 www.msjonline.org