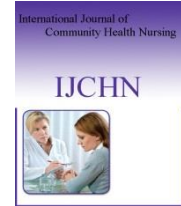




International Journal of Community Health Nursing

Journal homepage: www.mcmed.us/journal/ijchn



ASSESSMENT OF RISK OF VARICOSE VEIN AMONG ADULTS.

Dr. Kiruba J C^{1*}, Divya S², Gayathri G³

¹Principa, Department of Community Health Nursing, Sivagiri Sree Narayana Medical Mission College of Nursing, Varkala, Kerala, India.

²Assistant professor, Department of Child Health Nursing, Sivagiri Sree Narayana Medical Mission College of Nursing, Varkala, Kerala, India.

³Assistant professor, Department of Child Health Nursing, Sivagiri Sree Narayana Medical Mission College of Nursing, Varkala, Kerala, India.

Corresponding Author

Dr. Kiruba J C

Email: -

Article Info

Received: 29/05/2026; Revised: 25/06/2026

Accepted: 04/07/2026

ABSTRACT

Health refers to the level of functional or metabolic efficiency of a living being. It is related to lifestyle. Today increasing importance is placed on health, health promotion, wellness, and self-care. More than millions of people spend most of the working day on standing for prolonged time and many hours in static or same positions. 20% of energy is used for standing it uses more energy than sitting because human bodies are not designed to stand continuously at work. Prolonged standing, develops high health risks like tiredness, and loss of concentration. Varicose vein is a very common problem that develops due to prolonged standing. This study was conducted to assess the level risk of varicose vein among adults. The objectives of the study were to assess the risk factors of varicose vein among adults and to find out the association between risk factors of varicose veins and selected sociodemographic variables among adults. A non-experimental descriptive survey design was adopted. The study was conducted among 160 adults working in selected textiles and supermarkets. Participants were selected using convenience sampling. Structured questionnaire and checklist were used to assess the risk score of varicose veins. The data were analyzed using descriptive and inferential statistics. The findings of the study revealed that 47% of adults having moderate risk, 27% of adults having low risk, 25% of adults having high risk and 1% of adults having very high risk. The chi-square value shows that there was statistically significant associations risk score of varicose vein and age (p value < 0.001), educational qualification (p value < 0.001) and area of work (p value < 0.05). The study concluded that the majority of adults are at moderate risk of developing varicose vein, indicating the urgent need for early lifestyle modifications.

Key Words: Assessment, Risk, Varicose Vein, Adults.

INTRODUCTION

Good health is the prerequisite for good quality of life. The human body is the most fascinate and fantastic machine in existence. Organs are more complex units than tissues. All organs in our body depend on circulatory system and its smooth functioning. The circulatory system is a highly complex system that includes heart and a closed system of blood vessels. The vascular system mainly consists of arteries and veins.²

A Hazards survey of UK on 2005 conducted by union health and safety officers on shop workers, teachers, library staff, production line workers, bank workers, warehouse staff, museum workers, school supervisors, train drivers, printers, and engineers, found that a widespread problem from standing at work.³ Varicose veins are one among the major health problem affecting quality of life, impacting 10–30% of the world's population and imposing a significant cost burden on healthcare systems. As the global population ages, the prevalence of Varicose veins



and Chronic Venous Insufficiency (CVI) is expected to rise significantly, leading to unsustainable increases in healthcare resources and costs required to treat varicose veins in the future.⁴

High prevalence of varicose veins and its complications is an emerging problem in the 21st century, and it leads to an increase in disability and the cost of treatment⁵. Varicose veins of the lower extremities are the most common conditions that impose high costs on society⁶. As most of the workers in textile shops and supermarkets used to work in standing position for longer duration, they are highly prone to develop varicose vein. Hence, the investigators felt the need to assess the risk for developing varicose vein among workers in textile shops and supermarkets.

MATERIAL AND METHODS

Study Design

This study adopted a quantitative research approach with a non-experimental descriptive survey design to assess the risk of varicose vein among adults.

Study Settings

The study was conducted at selected shops like Shan Wedding centerkallambalam, Rajakumari supermarket Kallambalam and Rajakumari Silks Attingal, Soorath textiles Kallambalam in Thiruvananthapuram district.

Sample and sampling technique

In this study sample consist of 160 students who are working in selected shops of Thiruvananthapuram district in the age group of 25 – 55 years selected by convenience sampling.

Sample Size Calculation:

Sample size was calculated by the following formula.

Sample Size Calculation

$$n = \frac{4pq}{d^2}$$

$$P = 72.2$$

$$q = 27.8$$

$$d = 10\% \text{ of error value}$$

$$= 10/100 \times 72.2$$

$$= 7.22$$

$$\frac{4pq}{d^2} = 4 \times 72.2 \times 27.8 / 7.22 \times 7.22$$

$$= 154$$

Anticipating loss to follow up and missing of data, the minimum sample size is rounded to be 160

Inclusion Criteria:

Adults available at the time of data collection.

Adults willing to participate in the study

Exclusion criteria:

- Adults had surgeries within the past 6 months
- Adults with preexisting health condition
- Adults currently taking treatment for varicose veins
- Adults with neurological conditions.

Ethical Considerations

Ethical clearance was obtained from the Institutional Ethical Committee of Sivagiri Sree Narayana Medical Mission College of Nursing, Varkala. Formal permission was secured from the Principal of Sree Narayana College, Varkala and from the the owners of shops like Shan Wedding centre kallambalam, Rajakumari supermarket Kallambalam and Rajakumari Silks Attingal Soorath textiles Kallambalam in Thiruvananthapuram. Participants were informed about the purpose of the study, assured of confidentiality, and their written informed consent was obtained.

Data collection process

A total of 160 adults working in textile and supermarkets were satisfying the inclusion criteria were selected. On the next day investigators approached the adults and explained about the study and asked about the available time for data collection. After the initial interactions, the investigators introduced themselves and explained the purpose of study. To ensure willingness of the participant in the study, informed consent was obtained, and confidentiality of the data was assured to all participants. Data regarding socio demographic and risk factors of varicose vein among adults were collected using structured questionnaires and check list.

Sociodemographic Performa designed to elicit general information of the adults and it consisted of 12 items of selected sociodemographic variables such as age in years, gender, Religion, Area of residence, monthly income in rupees, marital status, educational qualification, duration of work in the current field, type of work doing in the shop, and BMI.

The check list consists of 20 items. Statement 7 and 10 have reverse scoring. The check list scoring is graded as 0-3 low risk

4-7 moderate risk

8-12 high risk

13 more –very high risk

Statistical analysis

Frequency and percentage were used to describe the socio demographic variables and risk factors of varicose vein. Chi-square was used to assess risk factors of varicose vein among adults and selected socio demographic variables.

a) Socio-demographic variables of the adults

Among the adults 36% were belongs to the age group of 25-35 years, 32% of adult were in the age group of



36-45 years and 32% were belongs to the age group of 46 and above years of age. Majority 61% of adults were females and 39% of adults were males. Based on religion, 66% adults were Hindu, 33% adults belongs to Muslim and 1% adults belongs to Christian. Majority 91% of adults living in rural area and 9% of adults were living in urban area. Among adults 78% belongs to nuclear family, 22% adults were belonging to joint family. Based on the marital status of adults 74% were married, 20% were unmarried, 4% were widow, 1.4% were divorced, and 0.6% were separated. Based on monthly income, 45% of adults having monthly family income between 5001-10000Rs, 26% of adults having monthly income less than 5000Rs, 23% had monthly family income between 10001-15000Rs, and 6% had monthly family income greater than 15001Rs. Based on the educational qualification, 39% were having secondary qualification, 34% were having primary qualification, 23% were graduated and 4% were post graduated. Majority 74% of adults working in textiles and 26% working in supermarket. Among adults, 70% working under sales department, 14% were in sales, 7% were in supervising and 9% were in housekeeping departments. Based on duration of work, 51% were working less than 5 year, 40% were working for 5-10 year, 8% were working for 11-20 year and 1% were working for more than 20 yr.

Based on the BMI, 51% were overweight, 41% were normal weight and 8% were underweight.

b) Level of risk factors of varicose vein among adults

The results showed that out of 160 adults, 47% of adults having moderate risk, 27% of adults having low risk, 25% of adults having high risk and 1% of adults having very high risk for having varicose vein.

c) Association between risk factors of varicose vein among adults and selected socio demographic variables

The chi-square values show that there was statistically significant association between risk score of varicose vein and age (p value <0.001.) The chi-square values shows that there was statistically significant association between risk score of varicose vein and education qualification (p value <0.01), the chi-square values shows that there was statistically significant association between risk score of varicose vein and area of work (p value <0.05). The chi-square values show that there was statistically no significant association between risk score of varicose vein and gender, monthly income, department, duration of work, area of residence, type of family, religion, marital status and BMI among adults.

Table 1: Distribution of young adults based on socio demographic variables.

Socio demographic variables	Frequency(f)	Percentage (%)
1.Age in years		
a) 25-35	58	36
b) 36-45	51	32
c) 46-55	51	32
2.Gender		
a) Female	98	61
b) Male	62	39
3.Religion		
a) Hindu	106	66
b) Muslim.	52	33
c) Christian.	2	1
4.Place of residence		
a) Urban.	14	9
b) Rural.	146	91
5.Type of family		
a) Nuclear.	125	78
b) Joint	35	22
c) Extended.	0	0
6.Marital status		
a) Married.	118	74
b) Unmarried.	32	20
c)Widow	6	4
d) Divorced	2	1.4
e) Separated	1	0.6
7.Monthly family income in Rupees		
a) ≤5000.		
b) 5000– 10000	42	26



c)	10001- 15000	72	45
d)	>15001	37	23
		9	6
8. Educational Qualification			
a)	Primary		
b)	Secondary	54	34
c)	Graduation	62	39
d)	Post Graduation	37	23
9. Area of work.			
a)	textiles	7	4
b)	supermarkets	118	74
10. Type of work in the shop.			
		42	26
a)	Billing		
b)	Sales		
c)	Supervisor	23	14
d)	Housekeeping	111	70
11. duration of work in years			
a)	< 5	11	7
b)	6 – 10	15	9
c)	11 – 20		
d)	>20	81	51
12. BMI			
a)	Underweight	65	40
b)	Normal weight	13	8
c)	Overweight	1	1
		13	8
		66	41
		81	51

Level of risk	f	%
Low	43	27
Moderate	76	47
High	40	25
Very high	1	1

DISCUSSION

The first objective of the study was to assess the risk of varicose veins among adults. The result showed that out of 160 samples, 47% of adults had moderate risk for varicose veins, 27% had low risk, 25% had higher risk, and 1% had very high risk. The above findings were supported by an epidemiological study conducted by Callam M J to assess the prevalence and risk factors of varicose vein among adults. The study reported that minor venous disease affects nearly half of the adult population, with 50-55% prevalence in women and 40-50% in men. Visible varicose veins were observed in 20-25% in women and 10-15% of men.⁷

The second objective of the study was to find out the relationship between varicose vein risk and selected socio-demographic variables among adults. The chi square test result showed that there was statistically significant association between age ($p < 0.001$), education qualification ($p < 0.01$), and area of work ($p < 0.05$) with varicose vein risk score and there was no significant

association between selected socio demographic variables. The above findings were supported by Chaya, Shree Hari Sharma and A. M. Vinayaka on Prevalence of Varicose Veins among Security Guards in Karnataka. The aim of the study is to assess the prevalence of varicose veins among security guards and examines contributing factors such as age, sex, years of experience, and job related activities. Stratified random sampling was used to select 100 samples across various age and experience groups. Data were collected through a structured questionnaire and clinical examinations. Descriptive and inferential statistical analyses, including chisquare tests and logistic regression, were performed using SPSS software to explore associations between demographic/job-related factors and varicose vein prevalence. The study findings concluded that the prevalence of varicose veins was approximately 15%, as well as varicose vein was prevalent among security guards, influenced by occupational factor prolonged standing. Results also concluded that age has



significant association with risk factors of varicose vein ($p < 0.001$).⁸

CONCLUSION

Significant portion of the workforce, including millions of employees, spends the majority of their workday in standing or static positions. Standing demands 20% more energy than sitting, and extended periods of standing at work can pose health risks, including varicose veins⁹. The present study was intended to assess the risk of varicose vein among adults. The following conclusion were drawn based on the findings of the study. Out of 160 samples, 47% of adults were at moderate risk, 27% of adults were at low risk 25 % of adults were at high risk and 1% were at high risk of varicose veins. Significant association found between quality of sleep of college

students and selected socio demographic variables such as age ($p < 0.001$), educational qualification ($p < 0.01$), area of work ($p < 0.05$). The findings concluded that, varicose veins among adults was a significant concern due to increasing prevalence and potential long-term complications.

Conflict of Interest : Nil

Source of funding : Self

Ethical Clearance:

Taken from institutional ethics committee of Sivagiri Sree Narayana Medical Mission College of Nursing, Varkala on 06.01.29(IEC NO: SCN/RES/24/25-26).

REFERENCES

1. Aslam, M. R. (2022). Global impact and contributing factors in varicose vein disease development.
2. Bhatt, S. (2026). *Varicose vein: Understanding the condition and how to treat it*. Mayo Clinic.
3. Dhuri, P. P. (2019). Assessment of level of knowledge regarding management of varicose vein among industrial workers. *International Journal of Advances in Nursing Management*.
4. Premier Veins. (n.d.). *Varicose veins: Risks and complications associated with untreated varicose veins*.
5. *Journal of Vascular Surgery: Venous and Lymphatic Disorders*. (2021).
6. Drake, R. L., Vogl, W., & Mitchell, A. W. M. (2010). *Gray's anatomy for students* (2nd ed.). Churchill Livingstone Elsevier.
7. Callam, M. J. (1994). Prevalence of chronic leg ulceration and severe chronic venous disease in Western countries. *Phlebology*, 7(Suppl. 1), 6–12.
8. Chaya, A. M., Sharma, S. H., & Vinayaka, A. M. (2024). Prevalence of varicose veins among security guards: A cross-sectional survey. *Journal of Ecophysiology and Occupational Health*, 24(4), 349–357.
9. Bahk, J. W., Kim, H., Jung-choi, K., Jung, M. C., & Lee, I. (2012). Relationship between prolonged standing and symptoms of varicose veins and nocturnal leg cramps among women and men. *Ergonomics*, 55(2), 133–139.

