

To Assess Knowledge About Varicose Veins and Its Prevention Among Traffic Police Personnel

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Abstract:

Background:

Varicose veins are a common vascular condition affecting individuals who stand for prolonged periods. Traffic police personnel are at higher risk due to the nature of their duty, which involves long hours of standing.

They are associated with symptoms such as pain, swelling, heaviness, and fatigue in the legs, which affect daily activities and work performance. These valves are responsible for maintaining unidirectional blood flow back to the heart.

When they weaken or fail, blood pools in the veins, causing increased pressure that leads to the development of varicosities.

Therefore, the present study was conducted to assess the level of knowledge regarding varicose veins and to identify preventive practices among traffic police personnel using a self-structured questionnaire.

Materials and Methodology:

The present study is a Cross-sectional Observational Study conducted using a convenient sampling method. The sample size was calculated using the formula $n = Z^2 \times p \times (1 - p) / d^2$,

Where, n = initial sample size

- **Z** = Z-value for 95% confidence level = 1.96
- **p** = estimated prevalence of knowledge = 0.60 (60%)
- **d** = margin of error = 0.05 (5%)

which yielded a required sample size of 107 participants. The study was carried out in the Pune region over a period of six months. Data were collected using a self-made questionnaire.

Ethical clearance was obtained from institutional ethical committee.

Informed consent was obtained.

The data were analysed by a statistician, and the results were obtained accordingly.

The study included traffic police personnel, both male and female, aged 30–50 years who were currently engaged in active field duty, with a minimum standing duration of 4–6 hours and at least 5 years of experience.

It excluded individuals with pre-existing vascular disorders or a known diagnosis of varicose veins prior to joining traffic duty, those involved in other jobs requiring prolonged standing, and those with a family history of varicose veins.

Results:

The study found that more than half of the participants (57%) demonstrated awareness of varicose veins, indicating that a moderate proportion of the study population had heard about the condition.

However, only 17% of the participants possessed adequate knowledge about varicose veins, suggesting a significant gap between general awareness and in-depth understanding.

Regarding preventive practices, 44% of the participants reported knowledge about prevention of varicose veins.

Conclusion:

The present study concludes that although a moderate level of awareness (57%) about varicose veins exists among traffic police personnel, there is considerable lack in detailed knowledge (17%) and understanding of preventive measures (44%).

This gap between awareness and knowledge highlights the need for targeted educational interventions.

Key Words:

Varicose veins, Swollen legs, Tortuous veins, Traffic police, Knowledge, Prevention.

1. Introduction:

Varicose veins are common in the superficial veins of the legs which are subject to high pressure when standing. Accumulation of more and more venous blood in the superficial venous system makes the superficial veins dilated and tortuous. A vein that has enlarged and twisted often appears as bulging, blue blood vessel that is clearly visible through the skin ^[1].

Varicose veins are often primary (affecting only the superficial veins), often result from a congenital or familial predisposition that leads to the loss of elasticity of the vein wall. Secondary varicosities occur

when trauma, obstruction, or inflammation that causes damage to the valves (which affect the deep veins). Varicose veins can appear anywhere in the body, but most often affect the legs ^[2].

As per the census of WHO (2007), 2% of the western population have varicose vein, women have 3-4 times more than men. Varicose veins are least found in Eastern population. Statistics as per the country for prevalence of varicose veins is 45 per 1000. It was showed approximately one in 22 for USA. Even in India, many elderly people are affected from varicose vein ^[3].

In today's world, a major proportion of our time in a day is engaged in our occupations, therefore, our wellbeing is significantly influenced by our work settings we are exposed to ^[4].

Age, gender, pregnancy, family history and prolong standing hours are some of the risk factors for varicose vein. Haemorrhage and thrombophlebitis may result from the varicose veins themselves; and other complications include oedema, skin pigmentation, varicose eczema, atrophy blanche, lipodermatosclerosis and venous ulceration ^[5].

Occupations involving standing for a long time and pregnancy are said to be the main risk factors for varicose veins ^[6].

Varicose veins frequently cause symptoms, the most common being aching or heaviness, which typically increases throughout the day. Other symptoms include ankle swelling and itching. Cutaneous burning sensation termed as "venous neuropathy" can also occur in patients with advanced venous insufficiency ^[7].

According to National Health Service waiting lists in UK, Varicose Veins diagnosis is still considerable unmet need and similarly in India. Especially in developing countries. like India, assessment and treatment were challenging but with the advancement of medical sciences, diagnosis of venous diseases using USG, doppler study, endovenous and compression therapies has made better impact for identifying and treating venous diseases ^[8].

The personnel also pursue a near-sedentary type of work as they only stand at one place for long hours or just walk a few meters, only when necessity arises. These factors such as prolonged standing and restricted mobility in terms of work demand pose a health hazard ^[9].

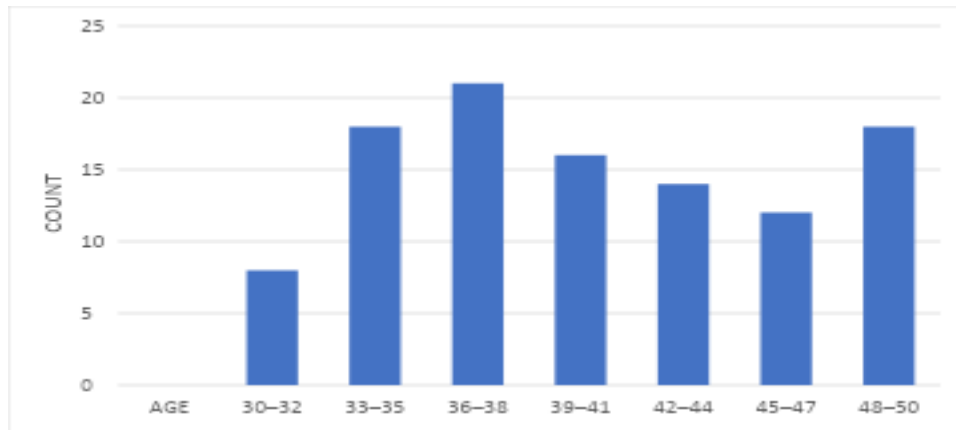
2. Results:

Age Wise Distribution of the Participant

Table 1

AGE	COUNT	PERCENTAGE
30-32	8	7.4%
33-35	18	16.8%
36-38	21	19.6%

39–41	16	14.9%
42–44	14	13.0%
45–47	12	11.2%
48–50	18	16.8%



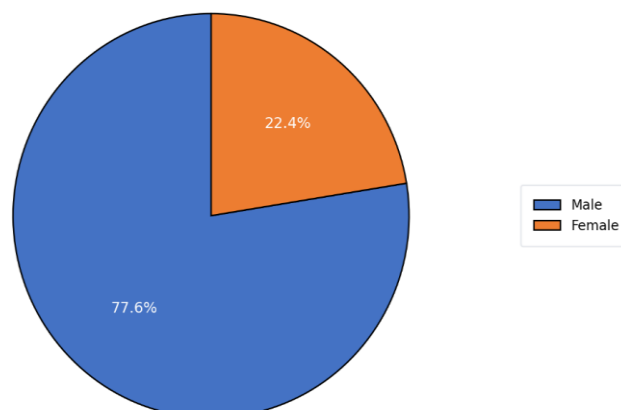
GENDER	COUNT	PERCENTAGE
Male	83	78%
Female	24	22%

Gender Wise Distribution of the Participants

Interpretation:

Maximum participants were from age group 36-38 (20%) indicating that most respondents belonged to the middle-age category. The minimum number of participants were from the 30–32 years age group (7.4%). This distribution suggests that the majority of respondents were experienced personnel who may have a higher risk of developing varicose veins due to prolonged standing during duty.

Gender Distribution



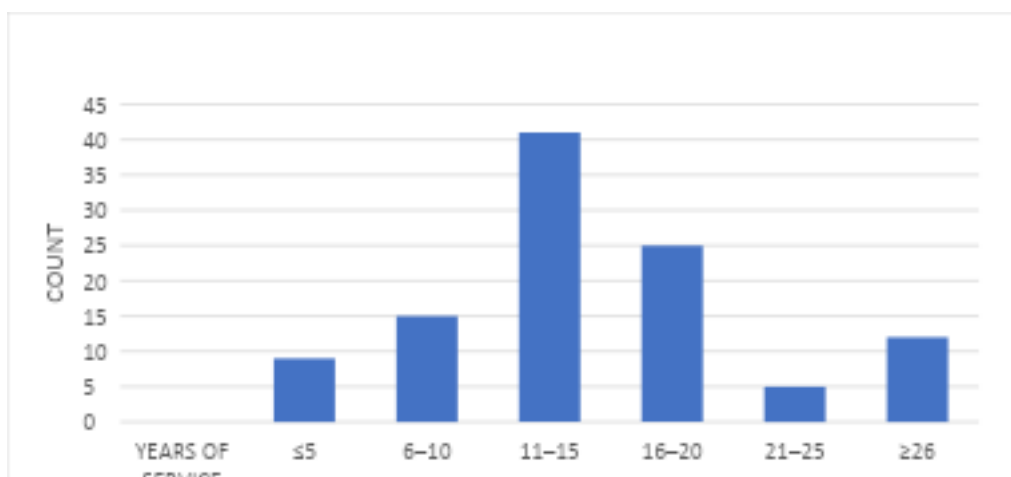
Interpretation:

Maximum participants were from male (77.5%) & minimum participants group was female (22.4%)
This indicates that most traffic police personnel involved in the study were male. The smaller proportion of female participants reflects the comparatively lower representation of women in traffic police duties.

Years of Services

Table 3

YEARS OF SERVICE	COUNT	PERCENTAGE
5	9	8.4%
6–10	15	14.0%
11–15	41	38.3%
16–20	25	23.3%
21–25	5	4.6%
≥26	12	11.2%



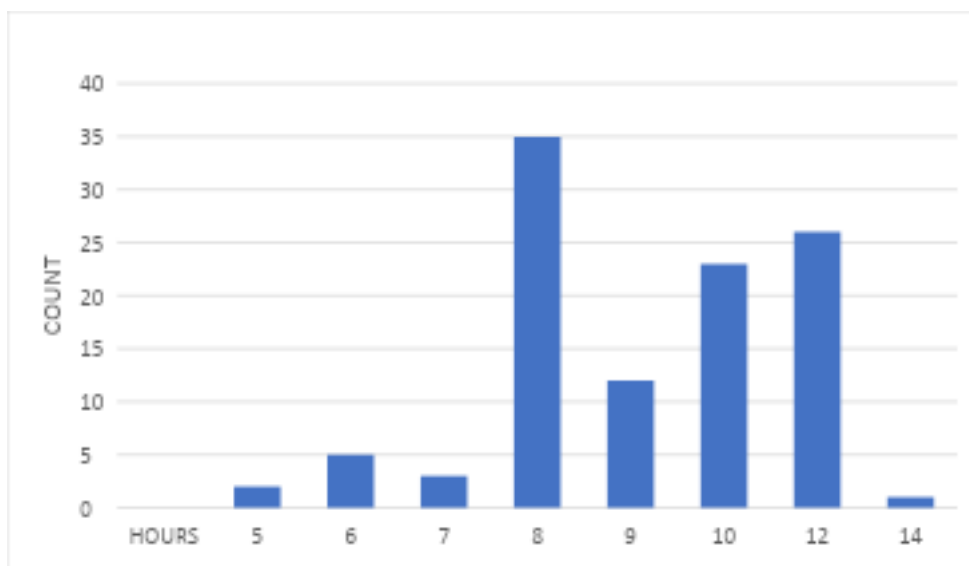
Interpretation:

Maximum participants were from 11–15 (38.3%). Minimum participant group was 21–25 (4.6%). The distribution of years of service among traffic police personnel shows that the maximum participants had 11–15 years of service (38.3%), indicating that most respondents were experienced in their profession. The minimum number of participants had 21–25 years of service (4.6%). Other groups such as 16–20 years (23.3%) and 6–10 years (14.0%) also represented a moderate proportion of the sample.

Average Hours of Standing Per Day

Table 4

HOURS	COUNT	PERCENTAGE
5-6	7	6.5%
7-8	38	35.5%
9-10	35	32.7%
11-12	26	24.3%
13-14	1	0.9%



Interpretation:

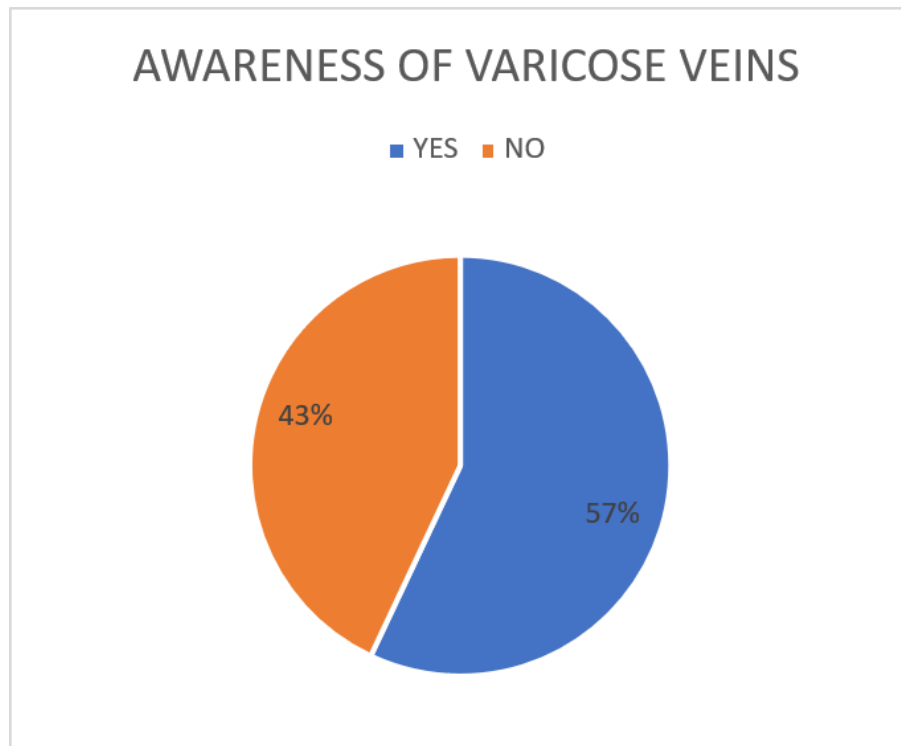
Maximum participants were 8 hours (32.7%), and the minimum group was 14 hours (0.93%). The distribution of average standing hours per day shows that the maximum participants stand for 8 hours (32.7%), followed by 12 hours (24.3%) and 10 hours (21.5%). The minimum number of participants stands for 14 hours (0.9%) during duty. This indicates that most traffic police personnel spend long

hours standing while performing their duties. Prolonged standing is an important occupational risk factor for developing varicose veins.

Awareness About Varicose Veins

Table 5

AWARENESS	COUNT	PERCENTAGE
YES	61	57%
NO	46	43%



Interpretation:

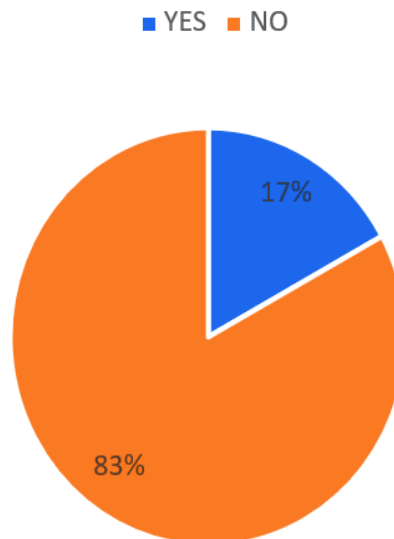
57% of participants were aware about varicose veins

Knowledge About Varicose Veins

Table 6

KNOWLEDGE	COUNT	PERCENTAGE
YES	18	17%
NO	89	83%

KNOWLEDGE ABOUT VARICOSE VEINS

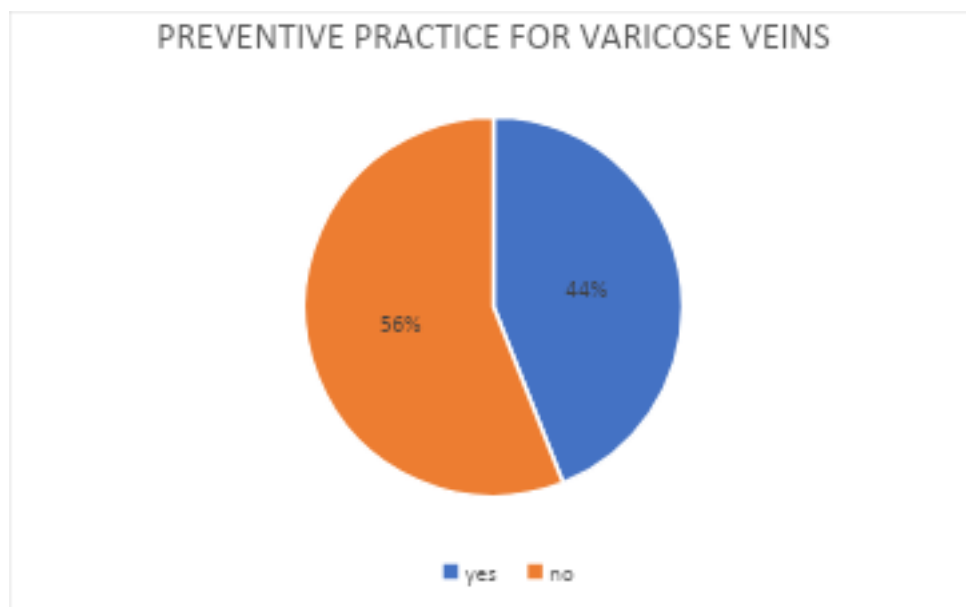


Interpretation:

17% of participants were having knowledge about varicose veins & 83% of participants lacked knowledge about varicose veins.

able 7

Preventive Practice About Varicose Veins		
PREVENTIVE PRACTICE	COUNT	PERCENTAGE
YES	8	44%
NO	10	56%



Interpretation:

44% of participants know about the preventive practice about varicose veins.

3. Discussion:

The current study evaluated the understanding and preventive measures related to varicose veins among traffic police personnel. The results showed notable deficiencies in awareness, in-depth knowledge, and preventive practices, even considering the occupational risks faced by this group. Traffic police officers face extended periods of standing, a recognized risk factor for developing venous conditions, highlighting the importance of awareness and prevention.

The demographic results indicated that most participants were in the 36–38 years age range and possessed 11–15 years of work experience. This indicates long-term workplace exposure to risk factors linked to venous insufficiency. Earlier research has indicated that advancing age and extended periods of work requiring prolonged standing are closely linked to the emergence of varicose veins. With advancing age, venous valves progressively diminish in effectiveness, resulting in venous reflux and

heightened venous pressure. Consequently, the age and service characteristics of participants in this study suggest a group significantly at risk of experiencing venous disorders.

Extended periods of standing surfaced as a significant work-related risk factor among participants, with the majority indicating they stood for 8–12 hours daily. Comparable results have been observed in earlier research, which showed a notable link between extended periods of standing and the development of varicose veins in traffic police personnel and other jobs that necessitate static standing positions. Prolonged standing lessens the efficiency of the calf muscle pump, leading to blood accumulation in the lower legs and heightened venous pressure. Eventually, this may result in venous enlargement, valve failure, and the formation of varicose veins. The results of the current study strengthen the significance of job-related risk factors in the development of venous disease.

In terms of gender distribution, most participants were male (78%), whereas females made up just 22% of the sample. This illustrates the gender distribution typically seen in traffic police units where male staff members are in the majority. While gender can affect the occurrence of varicose veins, the job-related exposure linked to long periods of standing continues to be a major contributing factor irrespective of sex.

Consequently, preventive measures must target all staff exposed to work-related risk factors. The research revealed that 57% of participants recognized varicose veins, whereas 43% were unaware of the condition. Despite over half of the participants being aware of varicose veins, their level of understanding remained insufficient given their high-risk job conditions. Limited knowledge may stem from a lack of occupational health education, absence of workplace health promotion initiatives, and poor access to information on venous conditions. These results indicate a requirement for focused awareness initiatives for traffic police staff to enhance knowledge of workplace health hazards and protective strategies. A significant discovery of the current study was the gap between general awareness and in-depth understanding.

Although more than half of the participants were familiar with varicose veins, just 17% displayed sufficient knowledge, while 83% showed inadequate understanding of the condition. This suggests that simply being aware does not automatically lead to having correct knowledge. Numerous participants might be familiar with the phrase "varicose veins" yet lack knowledge about its causes, symptoms, risk factors, complications, and preventive measures. Comparable findings have been noted in health education research, where shallow awareness did not lead to substantial health-related understanding. Insufficient knowledge can hinder the recognition of symptoms and decrease the chances of taking preventive actions.

The evaluation of preventive practices showed that merely 44% of participants adhered to preventive measures, with most not participating in such behaviors. This outcome is alarming because effective preventive strategies can greatly diminish the likelihood of developing varicose veins and related issues. Engaging in preventive actions like regular walking, calf muscle exercises, elevating the legs while resting, maintaining a healthy body weight, using compression stockings, and avoiding long periods of standing without breaks has been proven to enhance venous circulation and decrease venous stasis. The

low level of adherence to these practices among participants indicates a failure to effectively translate knowledge into action.

The identified discrepancy between awareness, knowledge, and preventive practices could be attributed to several factors. Traffic police personnel frequently face demanding work schedules, challenging traffic conditions, external stressors, and extended periods of standing.

leaving limited opportunities to practice preventive measures during work hours. Additionally, a lack of institutional support, inadequate workplace health policies, and limited access to preventive resources such as compression stockings may contribute to poor adherence to preventive behaviors. Therefore, improving knowledge alone may not be sufficient unless supported by workplace interventions and organizational policies.

The findings of this study highlight the urgent need for comprehensive occupational health programs targeting traffic police personnel. Regular health education sessions, awareness campaigns, periodic screening programs, and training on preventive strategies should be incorporated into workplace health initiatives. Employers should also consider implementing work-rest cycles, encouraging movement breaks, promoting physical activity, and facilitating access to compression therapy where appropriate. Such interventions may help reduce the burden of varicose veins and improve the overall health and productivity of traffic police personnel.

4. Conclusion:

The present study concludes that although a moderate level of awareness (57%) about varicose veins exists among traffic police personnel, there is considerable lack in detailed knowledge (17%) and understanding of preventive measures (44%).

This gap between awareness and knowledge highlights the need for targeted educational interventions.

5. Acknowledgement:

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