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## Assessment of risk factors of varicose veins among traffic police personnel of Bengaluru, Karnataka

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### Abstract

**Introduction:** Varicose veins are tortuous, elongated, dilated veins present subcutaneously characterised by the presence of reflux. Occupations which demand prolonged working hours makes the individual vulnerable for developing varicose veins.

**Objective:** This study was conducted to assess the risk factors involved in the development of varicose veins among Traffic Police Personnel, Bengaluru, Karnataka.

**Method:** A cross sectional study was conducted among 50 participants, where data was collected using a preformed questionnaire prepared by the experts and diagnosis confirmation was established by clinical examination.

**Results:** out of the 50 participants involved in the study, 60% were found to have long work hours >6 hours predisposing them to the development of varicose veins. A similar association was evident with prolonged years of such occupational exposure.

**Conclusion:** Traffic Police Personnel are at high risk of developing varicose veins which can ultimately hamper their quality of life if not timely intervened and followed up.

**Keywords:** Traffic police personnel, varicose veins, risk, occupations

### Introduction

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. Varicose veins is one such illness, cause of which can be attributed to the occupation one pursues, mainly those which demands prolonged hours of standing.

Traffic police personnel are expected to work for long hours on feet amidst the traffic making them prone to develop varicose veins. When a person stands most of the time, as in case of occupations that require prolonged standing like that of teachers, security guards, policemen, traffic police, cooks, conductors, tram drivers, etc. or in case of pregnancy, venous pressure develops in the veins causing them to overstretch thereby leading to incomplete closure of valves. This allows blood to flow backwards creating persistent venous hypertension followed by bulbous expansions of superficial veins well known as varicose veins. Other factors like age, sex, ethnic groups are also attributed to the cause of varicose but occupation plays a prime role in its occurrence.

Hence, this study was conducted among the traffic police personnel of Bengaluru to assess the risk factors leading to development of varicose veins in them.

### Materials and Methods

A cross sectional study was conducted among the traffic police personnel of Bengaluru, Karnataka. Prior to the study, a questionnaire was prepared to seek information regarding the hours of work, past medical history, demographic factors, smoking history. All participants were informed about the date, time and venue and informed consent was taken from them. A sample size of 50 participants were selected of age group 20 – 60 years, in whom presence of varicose veins were detected by thorough physical examination and clinical findings

### Results

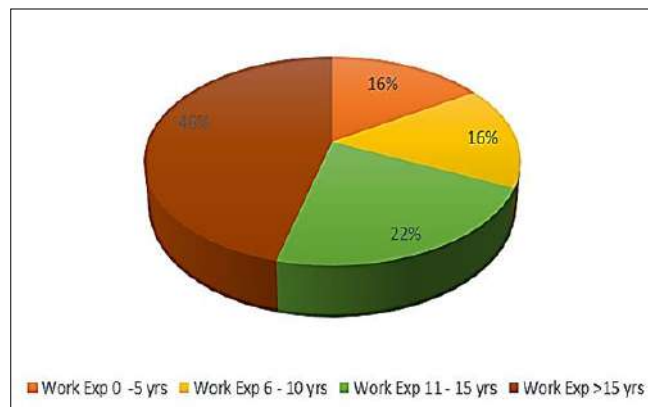
Out of the total 50 participants with varicose veins, 49 (98%) were males and 1 was female

(2%). Among them, 19 (38%) fall under the age group of 50-59 years, 15 (30%) under the age group of 30-39 years, 10 (20%) under 40 – 49 years while only 6 (12%) participants falling under the young age group of 20- 29 yrs. Work experience in years were categorised into four groups with 23 (46%) falling into the category of more than 15 years of experience, 11 (22%) coming under 11 – 15 years of experience, 8 (16%) participants each with 6-10 years and 0-5 years of experience.

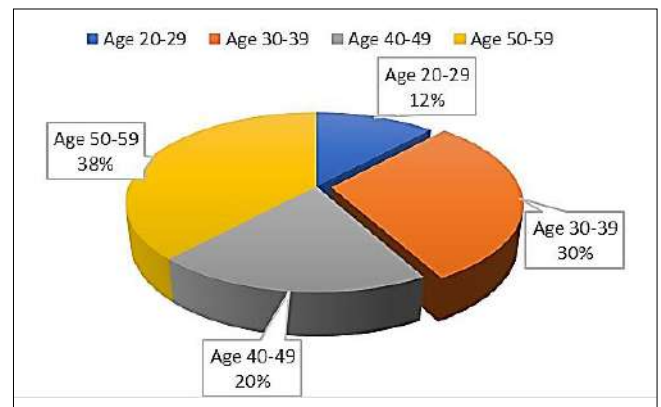
No. of daily standing hours were divided into two where 20 (40%) of them have 6 or less than 6 standing hours and 30 (60%) have more than 6 hours of standing time. Among them 40 (80%) had a negative family history, while 10 (20%) among those with varicose had a positive family history for the same. 9 (18%) out of the total participants carry a past history of varicose veins, whereas 41 (82%) do not have. Lastly, only 4 (8%) are accompanied by smoking habits while rest 46 (92%) aren't.

**Table 1:** Shows distribution of socio-demographic profile and other risk factors of the study participants

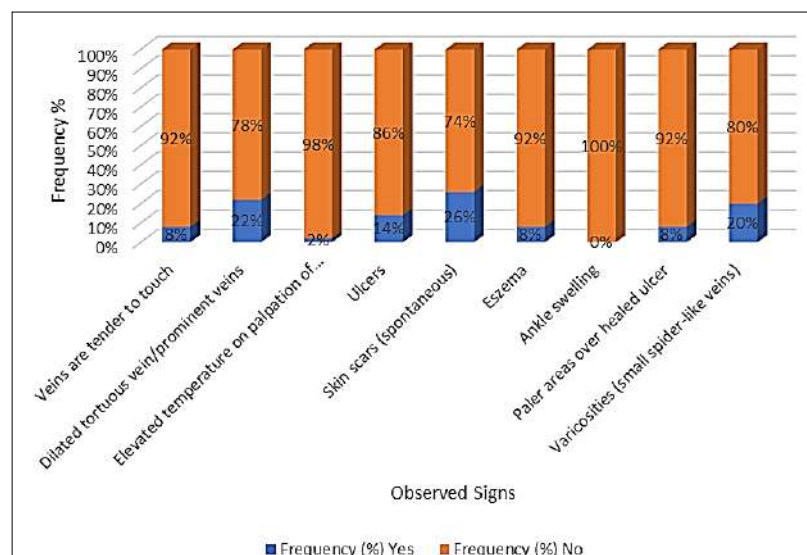
Variables	Categories	Frequency (%)
Age (in years)	20 – 29	6 (12)
	30 – 39	15 (30)
	40 – 49	10 (20)
	50 – 59	19 (38)
Sex	Male	49 (98)
	Female	1 (2)
Work experience	0-5	8 (16)
	6 – 10	8 (16)
	11– 15	11 (22)
	>15	23 (46)
Daily standing hours	≤6	20 (40)
	>6	30 (60)
Family History of Varicose veins	Yes	10 (20)
	No	40 (80)
Past History of Varicose veins	Yes	9 (18)
	No	41 (82)
Smoking Habit	Yes	4 (8)
	No	46 (92)



**Fig 1:** Work experience frequency %



**Fig 2:** Frequency %



**Fig 3:** Distribution of signs of varicose veins (n = 50)

## Discussion

Varicose veins can affect individuals of all age groups yet middle-aged individuals are the usual sufferers <sup>[1]</sup>. In the above study, with 38% of the study group belonging to 50 – 59 years age group suggests a higher frequency of varicose in the elderly population, followed by the age group 30 – 39 years with a frequency of 30%.

Though females are more affected than males owing to hormonal factors, the present study involves only 2% female population, rest 98% being affected males. In a similar study conducted among the traffic police personnel of Kathmandu, Nepal <sup>[2]</sup>, 89.5% of the affected personnel were males, consistent with our finding.

Among them, 46% of participants have more than 15 years of experience suggesting that prolonged standing for years paves way for chronic venous insufficiency leading to persistent venous hypertension and development of varicose. Similarly, 60% fall under the group of more than 6 standing hours per day which further strengthens the association of prolonged standing to the prevalence of varicose veins. Notably, this finding is consistent with the findings of the study done in Kathmandu, Nepal where 60% of the personnel had more than 6 hours of standing. There are few more studies that reported a strong association between prolonged standing and the development of varicose such as one conducted among hairdressers of Iran <sup>[3]</sup> and nurses of Dhulikel Hospital, Kathmandu <sup>[4]</sup>.

Evidence supports familial susceptibility to varicose veins <sup>[5]</sup>. A population-based study in France <sup>[6]</sup> has shown a strong link between family history as a risk factor and varicose veins but in our present study, only 20% of participants have a positive family history attributing to varicose veins while only 9% carry a past history of the same.

Role of lifestyle factors like smoking as one of the risk factors for varicose veins is not well established. Our present study reveals no link between them where among those affected with varicose veins, only 8% were smokers.

## Conclusion

On the basis of our above done studies, it can be concluded that traffic police personnel are at high risk of developing varicose veins taking into account their day long duty hours. There is also evidence of link between duration of work experience (in years) in such fields requiring upright standing for prolonged hours poses an occupational risk factor towards the development of varicose veins. Hence, it is always advisable to have periodic health check-ups for such high-risk occupations like traffic police personnel.

## Conflicts of interest

There are no conflicts of interest.

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