



## Prevalence of Varicose Veins among Medical Health Care Professionals: A Questionnaire Study

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### ABSTRACT

*The Medical profession nowadays is a highly demanding and stressful environment. Healthcare professionals encounter a great deal of stress at work in clinics. Varicose veins have become common problem and can be the main reason for decreased work performance, absenteeism, and behavioural disturbances in long standing medical professions.*

**Key words:** Varicose Veins, tailored interventions, healthcare roles, vascular condition, occupational health practices.

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### INTRODUCTION

Varicose vein come under the broadly defined category of superficial venous disease, Dodd and Cockett defined varicose veins, saying "a varicose vein is one which has permanently lost its valvular efficiency". Most researchers prefer Arnold's definition, which states that varicose veins are "dilated, elongated, or tortuous veins of any size [1]. Varicose vein a condition described as dilated, elongated, tortuous vein of limb [2]. It occurs more frequently in the lower extremities. Its 3to 4mm dilation of subcutaneous vein. This disease has many different patterns, including Reticular veins, telangiectasia, saphenous veins [3]. Varicose veins are subcutaneous veins that allow backflow of blood. Venous blood from the lower extremities returns to the right heart through the superficial and deep venous systems against gravity. The superficial venous system includes the greater saphenous vein, small saphenous vein and their tributaries. In healthy individuals 90% of the venous

return from the leg is transmitted by the deep vein system, only the superficial venous system drains blood from the epidermis and subcutaneous tissues. The regulation of venous return to the heart from lower extremities against gravity is mostly carried out by muscular pumps. When an individual is an active motion deep veins and sinuses are compress valves get closed allowing the blood to flow cranially. On contrary, motionless prolonged standing raises the pressure in foot leading to opening of valve and retrograde flow of venous blood .The exact aetiology of varicose is still unidentified, However there are number general risk factors that can be attributed to varicose vein such as heavy lifting, age, gender, weight, height, family history, genetics, smoking, lack of exercise, raised toilet seats, poor posture, oral contraceptives, climate, pregnancy, longer period of working in a standing position increases the prevalence of varicose veins and it's an important occupational risk factor [4]. Varicose vein can end up resulting in a variety of symptoms, including skin discoloration, irritation, burning sensations, and oedema of the lower extremities, all of which are typically accompanied by pain and discomfort. Furthermore, varicose vein may provoke major issues related to compromise deep and superficial venous system. Considering it appearance this condition affects the patients psychologically

and emotionally leading to poor quality of life [5]. Additionally, ignorance of condition leads to complications like lipodermatosclerosis, haemorrhage, thromboembolism, venous ulcer requiring surgical intervention. In Clinics, Patients seek to consult a doctor only after a varicose vein complication develops, rather than when the primary varicose vein is the sole issue. This cause, varicose veins remain to be an iceberg phenomenon. The prevalence of varicose vein is among medical practitioners in impoverished countries like India is unknown. Although it is widely accepted that varicose vein is a prevalent occupational risk among medical workers, yet its current status is unlighted. Medical health care professionals reported to have high rate of symptoms of varicose vein than another occupational group, especially in lower limb [6]. The majority of research on varicose vein focuses on treatment and its outcomes. A lot of studies on risk factors has focused on general risk factors in individuals diagnosed with Varicose vein, regularly performing duties in standing for prolonged periods has been exhibited that it increases the incidence of Varicose vein. It's anticipated that varicose vein will be recognised as an occupational disease. Currently, social awareness is very low regarding Varicose as a potentially occupational disease, and there is a lack of relevant research. Determining the association between prolonged periods of sitting and standing along with the length of shifts and the frequency of this disease requires an awareness of the prevalence of Varicose in various medical healthcare professionals. As a result, the purpose of this study was to identify the relationship between prevalence and occupational risk factors and to objectively diagnose varicose vein in medical healthcare professionals [7].

#### METHODOLOGY

A qualitative study including health care professionals in practice from all around Pune city was carried out. Prior to administrating the survey, each participant was made aware of their voluntary participation in the inquiry and assured that the confidentiality of their personal data would be maintained throughout. Certain sentences allowed them to select more than one alternative. After providing a detailed

explanation of the study's objectives, the questionnaire was distributed to medical health care professionals in Pune. The questionnaire was reviewed by the subject matters experts who judged the questionnaire for its relevance. Participants were requested to complete the questionnaire using an online Google Forms platform and provide their ratings and responses based on their personal experiences. Subsequently, the collected data were subjected to comprehensive statistical and descriptive statistics were employed to compare and analyse the obtained result. There were 22 Questions on the form overall. It included age, gender, Occupation of the participants. Questionnaire reliability was determined using Cronbach's alpha value 0.860 and validity of questionnaire was done which was found to be good. The projected community prevalence of varicose vein in health care professionals was assessed at 80% (0.85) for the purpose of calculating sample size. With a probability of alpha error ( $\alpha$ ) 0.05. The confidence value ( $1 - \alpha$ ) was determined to be 0.95. The confidence - related Z value 1.96. In this5. Investigation, the minimal sample size was approximately 246 participants which was rounded off to 250. SPSS, a statistical software program, was used to conduct the analysis. Version 21 of SPSS for window was developed by SPSS Inc. In Chicago, IL Statistics were deemed significant when the P value was less than 0.05.

#### RESULT

A total of 250 responses were included in the analysis. The gender distribution out of 245, out of which majority of respondents were females 160 (65.3%) and males were 85 (34.6%). The survey was conducted among Health care professionals (Table 1).

Dental practitioners were great in number (65.3%) followed by General physician (17.4%), Nurse (8.9%) while least being physiotherapists (8.5%) (Table 2).

67.3% Practitioners showed interference of varicose veins in their daily activities sometimes, 25.7% Practitioners showed interference often whereas 5.8% of PR actioners showed interference in daily activities due to varicose vein always.

73.4% Practitioners are sometimes concerned by the appearance of varicose veins, 13.4% practitioners are never concerned about the appearance whereas 13% are always concerned about the appearance of varicose veins (Table 3).

The percentages and frequency of respondents with varicose veins. The number of respondents agreeing that regular exercises subsides the symptoms of varicose veins was maximum and were 57.9%. The number of respondents agreeing that change in diet reduces pain and symptoms was maximum and were 58.3%.

The number of respondents agreeing that long working hours is major risk factor in developing varicose veins is maximum and were 48.1%. The number of respondents that strongly agreed on long working hours should be reduced to get appropriate rest was maximum and was 49.3% (Table 4).

Comparison of mean score (SD) of knowledge regarding varicose vein among different demographic variables. A statistically significant differences in mean scores were observed in knowledge score when compared against different profession (p<0.05) (Table 5).

**Table 1: Demographics, Frequency and Percentage.**

Responses	DEMOGRAPHICS	
	Frequency(n)	Percentage (%)
Gender		
Male	85	34.60%
Female	160	65.30%

**Table 2: Responses, Frequency and Percentage.**

Responses	RESPONSES	
	Frequency (n)	Percentage (%)
Nurse	42	17.40%
Dental practitioner	160	65.30%
General physician	42	17.40%
Physiotherapist	21	8.50%

**Table 3. Difficulties faced due to varicose veins.**

ITEM	FREQUENCY(N)	PERCENTAGE (%)
Have your vari- cose veins inter- fered with your daily	Always	17 5.80%
	Often	63 25.70%
	Sometimes	165 67.30%
	Never	0 0%
Does the appearance of your varicose veins causes you	Always	32 13%
	Often	0 0%
	Sometimes	180 73.40%
	Never	33 13.40%

**Table 4. Risk factors and remedy for varicose veins.**

RESPONSES	ITEM	
	FREQUENCY(N)	PERCENTAGE%
Does regular exercise sub- side your symptoms?	Strongly agree	44 17.90%
		142 57.90%
	Neutral	46 18.70%
	Disagree	9 3.60%
	Strongly disagree	4 1.60/0
Does change in your diet reduce pain	Strongly agree	39 15.90%
		143 58.30%
	Neutral	53 21.60/0
	Disagree	8 3.20%
	Strongly disagree	2 0.80%

Table 5: Gender and Profession.

GENDER	
DEMOGRAPHIC	KNOWLEDGE
Male	5.62 (0.91)
Female	5.81 (0.73)
p-value	0.247
PROFESSION	
Nurse	4.48 (1.56)
Dental practitioner	5.91 (0.68)
General physician	6.52(0.5)
Physiotherapist	5.95 (0.83)
p-value	0.041
Total	5.71 (0.67)

**DISCUSSION**

We conducted study to evaluate the prevalence of risk factor of varicose vein among medical health care professionals, In India; very few studies have looked into the risk factors that are related to varicose veins as an occupational condition. From our survey we found 48.8% of medical healthcare worker are affected with varicose vein. Our results showed a substantial variation in the gender predisposing to varicose vein. Varicose vein was shown to be more common in female medical professionals than in male ones, with 65.5% of female practitioners and a comparably low 34.6% of male practitioners having varicose veins. Teachers they also found the total prevalence of 42%, out of which in females alone, it was 37%? The tendency for females to develop varicose veins may be attributed to the actions of the hormone's progesterone and oestrogen. Because progesterone binds to its receptor on the venous walls, decreased collagen is synthesis, which results in hypotonia of the vein's smooth muscle. Female hairdresser found the prevalence of varicose veins was 47.7%, with mild/moderate varicose veins accounting for 27.9% and severe varicose veins for 19.8%. significant proportion of people have varicose veins; in which half of women and one-third of males [8-10]. In our survey, we estimated the prevalence of varicose veins, focusing on its associated risk factors gender, family history, occupational risk factors (longer work history, working hours, nature of lifestyle factors such as weight, diet, and physical activity) by doing questionnaire survey we come to result 36.7% of individuals strongly agree that they develop varicose vein on working in prolonged standing positions while 48.1% agree that may had develop varicose vein after

working longer shifts. Working position and prevalence of varicose vein found 30.42% of individual working in standing position, 26.43% walking position and 14.83% in sitting positions. This study compared with our study showed similar result of greater prevalence on individual working in standing position. nurses also suggest the high percentage of our Nurses affected with Varicose vein, who are exposed to increased years of service and long-standing hours at the patient's bedside [11, 12]. From our study we conclude that out of total number of participants 5.8% always, 25.7% often while 67.3% sometime observed the interference in daily activities. in addition to having varicose veins, 65.2% of patients also have associated venous disorders such ulceration, oedema, or skin abnormalities, which impaired quality of life [13]. 26.4% of individuals affected with varicose vein showing family history of same. Offspring with one affected parent have 2.39 and with two affected parents have 5.88 Standardized incidence ratio of prevalence of disease [14]. The prevalence of varicose veins for a person was 90% when both parents suffered from varicose veins, 25% in males and 62% in females when one parent was affected, and 20% when neither parent was affected [15]. According to the responses to our questionnaire, we identified 60.4% of affected individuals wear compression stocking which reduces the worsening of symptoms of varicose vein and only 16% had undergone stripping or phlebectomy surgery. Compressive stockings were used to treat varicose veins in about 30.5% of the participants in this study. Only 2.5 percent of patients had surgery, 8.5% received sclerotherapy (varicose vein injections) [16]. In our study we enrolled only medical healthcare professionals so that we get a precise number of subjects who are more frequently suspected

to work for a prolonged duration with no fixed working hours as a challenge of their profession. Since medical professionals were included in the study only and not people in general, the sociodemographic features of our sample cannot be used to describe the general situation. This is one of the limitations of our study. Despite of these limitations, our study is among the very few studies which to compare occupations as a risk factor among medical healthcare professionals of different groups and can be used as the basis for further studies on occupational risks for Varicose vein. We need to include school teachers and professors and unmatched workers and further analyses the occupational burden of Varicose vein in specific high-risk occupations.

### CONCLUSION

The key objective of this study was to determine the risk factors causing varicose vein and the frequency of this disease in medical healthcare professionals, a highly susceptible occupational group. In order to accomplish this, we conducted a questionnaire survey among medical professionals, asking a wide range of questions to those who suffer from varicose veins. Based on the responses we received, we concluded that the severity of the condition increases with increased working hours, particularly when standing for extended periods of time. This allowed us to conclude that the prevalence of varicose veins and longer work shifts are directly correlated. The prevalence also shows high inclination over female medical healthcare worker when compared with male worker in our study showing 65.5% female practitioners experiencing the condition which is high in number in relation to male practitioners. Diet and regular exercise are factor which also have direct correlation with varicose vein which we found after detail questioning with our subjects on which majority have noticed that symptoms and pain subside after minting proper diet and regular exercise.

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