

# Prevalence of Varicose Veins in Female Population Having Prolonged Sitting Jobs

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## ABSTRACT

Varicose veins are abnormal, dilated blood vessels caused by weakening in the vessel wall. Causative factors of varicose veins are multifactorial, of which one can be attributed to constant sitting or standing. Today a lot of occupation and profession has sprung up where people are required to either stand or sit for prolonged period of time which alarms the risk of getting varicose veins. Women are at higher risk of getting varicose veins as compared to men. There are numerous studies which have proven the relationship of constant standing and varicosities of lower limb, but only few studies are available showing the relationship of constant sitting and prevalence of varicose veins. Thus the aim of this study was to find out the prevalence of varicose veins in female population whose nature of job demands prolonged period of sitting hours. 30 women (10 in each group), aged 20-45 years and fulfilling the inclusion criteria were enrolled for the study. Each of them was thoroughly examined by means of inspection and palpation for varicose veins. At the end of the study, data was collected and statistically analysed using the appropriate statistical tests. Results of the study showed that out of 30 women 15 were suffering from varicose veins indicating high prevalence of varicose veins in female population having prolonged sitting jobs. The

prevalence increases with hours of sitting, type of sitting and number of years of occupation.

**KEY WORDS:** varicose veins, prolonged sitting jobs, female population.

## INTRODUCTION

Varicose vein is one type of venous insufficiency which presents with elongated, dilated or tortuous veins caused by permanent loss of its valvular efficiency [1]. The primary cause of varicose veins and its consequences can be attributed to lack of prevention due to insufficient knowledge about the risk factors, which primarily include age, the female gender, congenital anomalies of the veins, positive family history, obesity, pregnancy, constipation, hormonal changes, as well as long stay in a sitting or standing position and is related to the work performed [2]. Most of the evidence from various studies indicates a higher prevalence of varicose vein in women [4]. A significant relationship between postures adopted at work and the development and/or exacerbation of varicose veins has been the subject of many scientific studies [8]. Due to the fact that the consequences of undiagnosed and untreated chronic venous insufficiency are very serious, and that the number of jobs in which most duties are performed in the standing or sitting position is still increasing, undertaking a study on the

incidence of chronic venous insufficiency among persons who have a job of such nature, and identifying the relevant factors, appears to be justified. Thus, the study is performed.

**MATERIALS AND METHODS**

**AIMS AND OBJECTIVES-** To study the prevalence of varicose veins in female population having prolong sitting jobs.

**STUDY DESIGN** -Prevalence study

**SAMPLING TECHNIQUE** – Female population having prolong sitting jobs as follows;

Group 1- Bank clerks (Hang -legged sitting)

Group 2- Papad making (Cross legged sitting)

Group 3- Agarbatti making [incense sticks] (straight leg sitting)

**SAMPLE SIZE** - 30 subjects

**AGE** - 20-45 years

**SURVEY PLACES-**

**Group 1-** Punjab National Bank

Maharashtra bank

Bank of Hyderabad

**Group 2** - Papad Gruhudyog

**Group 3-** Raj Gruhudyog

**INCLUSION CRITERIA:**

1. Sitting job
2. Age 20-45 years
3. Women

**EXCLUSION CRITERIA:**

1. Obesity
2. Heredity
3. Menopause
4. Leg injury
5. Deep vein thrombosis
6. Geriatric age group
7. Men

**METHODOLOGY**

30 women between the age group of 20-45 years were included in prevalence study of varicose veins in female population having prolong sitting jobs. They were randomly divided into 3 groups having 10 women in each group.

1. Group 1- Bank clerks (Hang -legged sitting)
2. Group 2- Papad making (Cross legged sitting)
3. Group 3- Agarbatti making [incense sticks] (straight leg sitting)

A detailed examination by means of inspection and palpation was carried out in standing position with both lower limbs exposed. The limbs were examined for dilated veins. The skin of the lower limbs was examined for edema, pigmentation, eczema and ulceration. A questionnaire was given for biodata and general information.

**Data Analysis and Graphical Representation**

**PREVALENCE OF VARICOSE VEINS When type of sitting was considered**

**TABLE NO.1**

Group	No. of subjects	No. of subjects having varicose veins
Group 1	10	7
Group 2	10	5
Group 3	10	3

**When duration of sitting was considered Group 1**

**TABLE NO. 2**

Duration	No. of subjects	No. of subjects having varicose veins
1-2 hours	10	0
2-3 hours	10	3
4-5 hours	10	4

**Group 2**

**TABLE NO. 3**

Duration	No. of subjects	No. of subjects having varicose veins
1-2 hours	10	0
2-3 hours	10	2
4-5 hours	10	3

**Group 3**

**TABLE NO.4**

Duration	No. of subjects	No. of subjects having varicose veins
1-2 hours	10	0
2-3 hours	10	0
4-5 hours	10	3

When no. of years of occupation was considered

**Group 1**

**TABLE NO.5**

No. of years of occupation	No. of subjects	No. of subjects having varicose veins
1-5 years	10	1
5-10 years	10	2
10-15 years	10	4

**Group 2**

**TABLE NO.6**

No. of years of occupation	No. of subjects	No. of subjects having varicose veins
1-5 years	10	0
5-10 years	10	2
10-15 years	10	3

**Group 3**

**TABLE NO.7**

No. of years of occupation	No. of subjects	No. of subjects having varicose veins
1-5 years	10	0
5-10 years	10	1
10-15 years	10	2

**RESULT**

Data was collected and statistically analysed using the appropriate statistical tests. Results showed that out of 30 women 15 were suffering from varicose veins, elaborated as follows:

**WHEN TYPE OF SITTING WAS CONSIDERED**

**Group 1- Hang legged sitting**

Out of 10 studied subjects,7 subjects were suffering from varicose veins i.e., 70% prevalence.

**Group 2- Cross leg sitting**

Out of 10 studied subjects,5 subjects were suffering from varicose veins i.e., 50% prevalence.

**Group 3-Long leg sitting**

Out of 10 studied subjects,3 subjects were suffering from varicose veins i.e., 30% prevalence.

**WHEN DURATION OF SITTING WAS CONSIDERED**

**Group 1**

1-2 HOURS- None of the subjects were suffering from varicose veins i.e.,0% prevalence.

2-3 HOURS - Out of 10 studied subjects,3 subjects were suffering from varicose veins i.e., 30% prevalence.

4-5 HOURS-Out of 10 studied subjects,4 subjects were suffering from varicose veins i.e., 40% prevalence.

**GROUP 2**

1-2 HOURS -none of the subjects were suffering from varicose veins i.e.,0% prevalence.

2-3 HOURS- Out of 10 studied subjects,2subjects were suffering from varicose veins i.e., 20% prevalence.

4-5 HOURS-Out of 10 studied subjects,3 subjects were suffering from varicose veins i.e., 30% prevalence.

**GROUP 3**

1-2 HOURS-none of the subjects were suffering from varicose veins i.e.,0% prevalence.

2-3 HOURS-. none of the subjects were suffering from varicose veins i.e.,0% prevalence.

4-5 HOURS-Out of 10 studied subjects,3 subjects were suffering from varicose veins i.e., 30% prevalence.

**WHEN NUMBER OF YEARS OF OCCUPATION WAS CONSIDERED-**

**GROUP 1-**

1-5 YEARS- Out of 10 studied subjects,1 subject was suffering from varicose veins i.e., 30% prevalence.

5-10 YEARS -Out of 10 studied subjects,2 subjects were suffering from varicose veins i.e., 20% prevalence.

10-15 YEARS- Out of 10 studied subjects,4 subjects were suffering from varicose veins i.e., 40% prevalence.

**GROUP 2-**

1-5 YEARS- Out of 10 studied subjects, none of the subjects were suffering from varicose veins i.e.,0% prevalence.

5-10 YEARS -Out of 10 studied subjects,2 subjects were suffering from varicose veins i.e., 20% prevalence.

10-15 YEARS- Out of 10 studied subjects,3 subjects were suffering from varicose veins i.e., 30% prevalence.

### GROUP 3 -

1-5 YEARS- Out of 10 studied subjects, none of the subjects were suffering from varicose veins i.e.,0% prevalence.

5-10 YEARS -Out of 10 studied subjects,1 subject was suffering from varicose veins i.e., 10% prevalence.

10-15 YEARS- Out of 10 studied subjects,2 subjects were suffering from varicose veins i.e., 20% prevalence.

### DISCUSSION

Table number 1, when type of sitting was considered, shows 70% prevalence of varicose veins in females whose job demanded prolong hours of sitting keeping their legs hanged. The probable reason of high prevalence of varicose veins in hang legged sitting as per stated by Akoijam Sangita Devi et al, in their study is, when sitting for a long time with legs down, the blood in the veins of the legs can pool and the increased hydrostatic pressure in the veins can cause stretching of veins which sometimes can weaken the walls of the veins and damage the vein valves resulting in varicose vein. [11]. Table number 2, 3 and 4, when duration of sitting was considered, shows 40% prevalence of varicose veins in women requiring at least 4-5 hours of hang legged sitting. This prevalence reduced to 30% in women requiring 4-5 hours of cross leg and straight leg sitting in their job. This result of our study is supported by the study conducted by Elzbieta Lastowiecka -Moras which aimed to evaluate the incidence of chronic venous insufficiency in a group of persons employed in workplaces with a predominance of standing or sitting positions. The results of their questionnaire studies showed a statistically significant positive correlation ( $p < 0.05$ ) between work performed in the sitting position (over 4 h during a work shift) and varicose veins of the lower limbs. [3]. Table number 5,6 and

7, when number of years of occupation was considered, shows 40% prevalence in women working since 10-15 years in hang legged sitting posture. This prevalence reduced to 30% which again reduced to 20% in women working in cross leg and long leg sitting respectively having same working years i.e., 10-15 years. This result of our study is supported by F Tuchsén et al, who conducted a 12 years follow up study on 5649 workers and found that during 12 years of follow up, 40 hospitalisations due to varicose veins were observed among the men and 71 among the women and stated that as the years of occupation increases the relative risk of varicose veins also increases. [12]

### CONCLUSION

The study indicates high prevalence of varicose veins in female population having prolong sitting jobs. The prevalence increases with hours of sitting, type of sitting and number of years of occupation.

### Declaration by Authors

**Ethical Approval** - Approved

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**Source Of Funding** - None

**Conflict Of Interest** - The author declares no conflict of interest.

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