



PREVALENCE OF VARICOSE VEINS AMONG HOSPITAL EMPLOYEES

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ABSTRACT

Background: Standing and sitting is a natural human posture. Working in a standing position on a regular basis can cause sore feet, swelling of the legs, varicose veins, general muscular fatigue, low back pain, stiffness in the neck and shoulders and other health problems. **Aims and Objectives:** To assess the prevalence, to identify the risk, to find out the association between the prevalence and risk with variables and to identify the deficit areas of knowledge in view to prepare a pamphlet for early detection & prevention of varicose veins. **Methodology:** An exploratory quantitative approach and non-experimental research design were adopted for the study. The sample size was 200 hospital employees comprising of surgeons, staff nurses, laboratory technicians and ward attendants (50) each were selected by purposive sampling technique. A structured questionnaire and physical examination performa was prepared after extensive review of literature and expert's opinion. Pilot study reliability 0.8 was calculated. The data was analyzed by using descriptive and inferential statistics. **Results:** The findings of the study were 8% of staff nurses & 4% ward attendants had high prevalence, 2% high risk was present among ward attendants. According to risk variables Age Professional experience, BMI and Gender had association among employees. Deficits were found among management of varicose veins. **Conclusion:** Findings shows that staff nurses and ward attendants had high prevalence. According to rank order majority of the employees had visibility of signs. Among ward attendants 2% high risk was found. Knowledge deficits were found among management areas.

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INTRODUCTION

Prevalence of varicose veins among hospital employees

Working in a standing position on a regular basis can cause sore feet, swelling of the legs, varicose veins, general muscular fatigue, low back pain, stiffness in the neck and shoulders, and other health problems. These are common complaints among sales people, machine operators, assembly-line workers and others whose jobs require prolonged standing. Veins are blood vessels that return deoxygenated blood from the outer parts of the body back to the heart and lungs. When veins become abnormally thick, full of twists and turns, or enlarged, they are called varicose veins.

Generally, the veins in the legs and thighs have a tendency to become varicosed. Many factors can aggravate the situation. Pregnancy is associated with an increase in blood volume. Also, an added pressure on the veins in the legs by the weight of the growing uterus and the relaxation effects of the hormones estrogen and progesterone on the vein walls contribute to the development of varicose veins during pregnancy. Following heart attack and stroke, venous thromboembolism (vein blockage by a clot) is the third most common cardiovascular disease in the United States, responsible for between 300,000 and 600,000 hospitalizations and up to 100,000 deaths annually. Varicose veins are abnormally dilated, tortuous superficial veins caused by incompetent venous valves. Most commonly this condition occurs in the lower extremities, the saphenous veins, or the lower trunks, however it can occur elsewhere in the body such as esophageal varices Oxford dictionary defines as "veins that are distended, lengthened and tortuous" porter describes as "dilated, palpable subcutaneous veins generally larger than 4mm.

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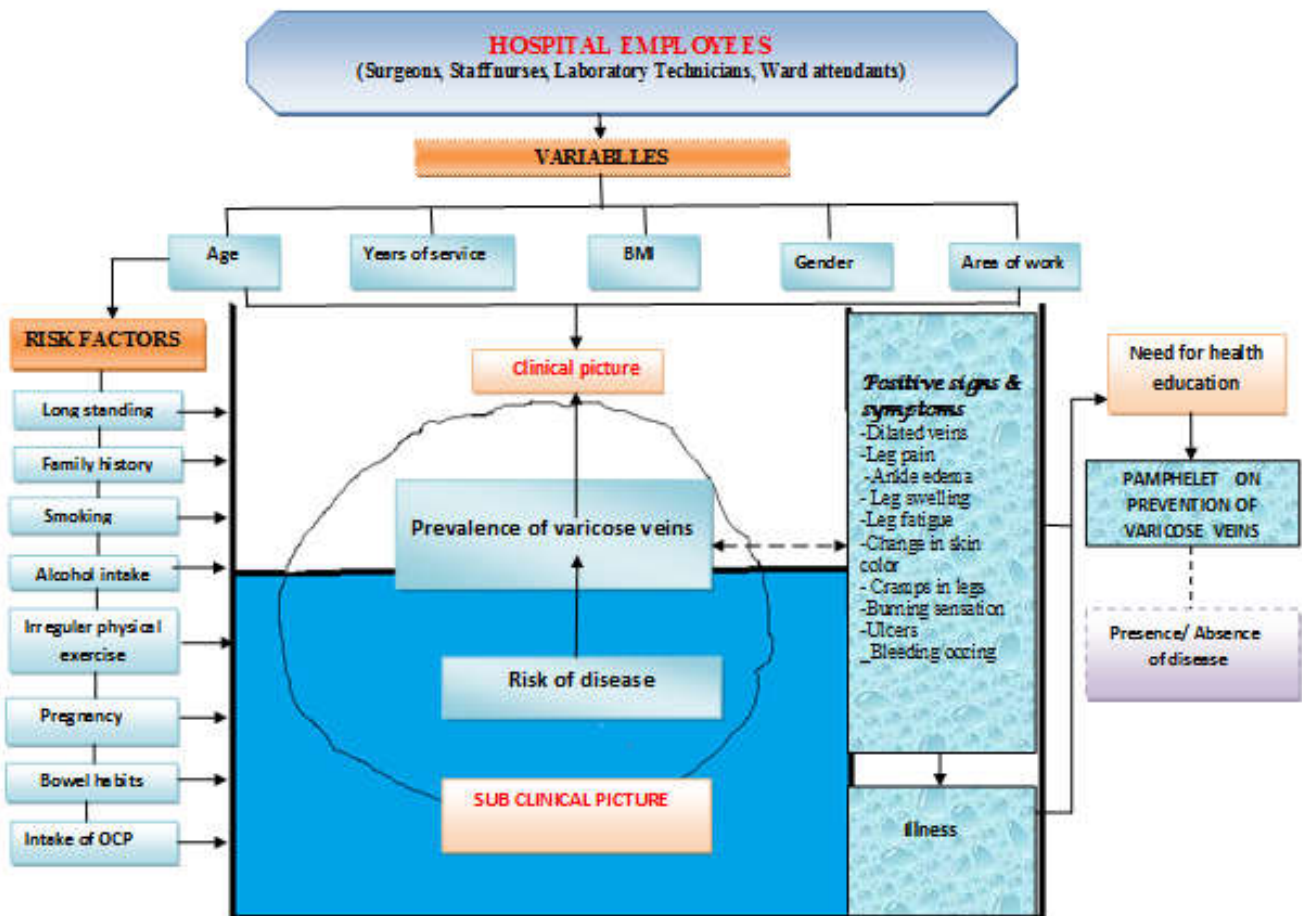


Fig. 1. Modified conceptual framework based on ice berg of disease Model Park K 2005"

Varicose veins may be either primary or secondary. Primary varicose veins often result from a congenital or familial predisposition that leads to loss of elasticity of veins wall. Secondary varicosities occur when trauma, obstruction, DVT or inflammation causes damage to valves.

Research problem

“An Exploratory Study to Assess the Prevalence of Varicose Veins among Hospital Employees of a Selected Hospital, Ludhiana, Punjab”.

Objectives

- To assess the prevalence of varicose veins among hospital employees.
- To identify the risk of varicose veins among hospital employees.
- To find out the association between the prevalence of varicose veins and selected variables such as age, professional experience, BMI, gender and area of work.
- To find out the association between the risk of varicose veins with selected variables like age, professional experience, BMI, gender and area of work.
- To identify the deficit areas of knowledge among hospital employees & to prepare a pamphlet for early detection & prevention of varicose veins.
- To identify the deficit areas of knowledge among hospital employees & to prepare a pamphlet for early detection & prevention of varicose veins.

Assumption

Hospital employees working for more than five years in their profession and whose job require long standing /sitting position are more prone to develop varicose veins.

Conceptual framework

Conceptual model of the Present study is based on the ICEBERG OF DISEASE MODEL.(Park , 2005) Concept closely related to the term “Spectrum of diseases” there is a variation in manifestations of varicose vein is the concept of the iceberg phenomenon of disease. According to this concept varicose vein can be compared with an iceberg. This study was done on the basis of single examination and at one point time.

MATERIALS AND METHODS

Research approach & Research design: Quantitative research approach and Non experimental exploratory research design were used.

Independent variables: Age, professional experience, BMI, gender and area of work.

Dependent variable

- Prevalence of Varicose veins,
- Risk of varicose veins.
- Knowledge about varicose veins

Research setting: Study was conducted in Christian Medical College and Hospital, Ludhiana, Punjab.

Target population: A group of hospital employees working in CMC & Hospital, Ludhiana at a specific time period in a year.

Sample & Sampling technique: Sample of 200 employees (i.e. Surgeons, Nurses, Lab technicians and Ward attendants) who were vulnerable for developing varicose veins. Purposive sampling technique was used to collect the data.

Inclusion criteria: Surgeons, staff nurses, laboratory technicians and ward attendants above the age of 20 years

Exclusion criteria: Hospital employees having history of hemorrhoids, were excluded from samples.

Selection & Development of tool: A structured questionnaire was developed by consulting expert’s opinion, review of Literature from various books and journals. After the opinion of experts amendments were made. The tool was consisted of the following four parts:

Part I: Demographic Data

Part II: Performa to assess prevalence of varicose veins

Part III: Questionnaire to identify risk of varicose veins

Part IV: Performa related to knowledge on varicose veins.

Part I: Demographic Data

Personal information of subjects i.e, age, professional experience, BMI (height and weight), gender, area of work.

Part II: Structured Questionnaire to assess prevalence of varicose veins

It consist of 20 items related to signs and symptoms. It was further divided into 2 categories: Signs and Symptoms.

Part a: It comprised of 10 items related to signs of varicose veins

Maximum score=10 Minimum score=0

Part b: Consist of 10 items related to symptoms of varicose veins

Maximum score = 20 Minimum score = 0

Criterion Measure

Criterion measure for evaluation of Prevalence (signs and symptoms)

Levels of Prevalence	Score	Percentage
High prevalence	>15	> 50%
Low prevalence	≤15	≤50%

Part III: Structured Questionnaire to identify risk of varicose veins

It consists of 16 items to assess the risk.

Maximum score= 16 Minimum score =0

Levels of Risk	Score	Percentage
High Risk	>8	> 50%
Low Risk	≤8	≤50

Part 4:- Knowledge questionnaire related to varicose veins

It consist of 24 items to assess knowledge.

Maximum score=24 Minimum score = 0

Levels of knowledge	Score	Percentage
Good	> 16	66%
Average	16-8	66-33%
Below average	<8	<33%

Area	Item number	Maximum score
General information	1.1-1.2	2
Causes and risk factors	2.1-2.5	5
Signs and Symptoms	3.1-3.3	3
Diagnostic evaluation	4.1-4.2	2
Management	5.1-5.2	2
Prevention	6.1-6.7	7
Complications	7.1-7.3	3

Each correct (Yes) answer carries one mark and wrong (No) answer carries zero (0) marks.

Validity of the Tool: Content validity of both the tools was determined by expert opinion regarding relevance of items.

Reliability of the Tool: Reliability was computed by split half method, using Karl Pearson & Spearman Brown’s Prophecy Formula.

Ethical Consideration: Verbal consent was taken from the respondents.

Plan of Data Analysis An analysis of data was done on the basis of objectives of the study. Data was analyzed by using descriptive statistics and inferential statistics.

RESULTS

Section 1: Sample characteristics

According to demographic variables maximum female employees in age group of 31-40years having 2-5years of professional experience with BMI of 18--24 & according to area of work surgeons and laboratory technicians were in equal number followed by staff nurses and ward attendant working in critical area & general ward respectively.

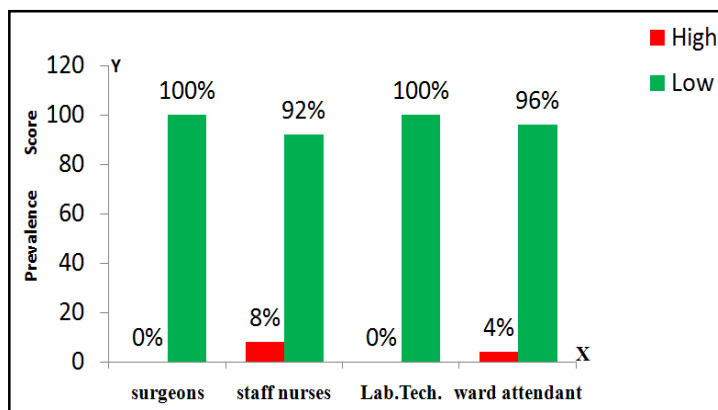
Section 2. Findings related to prevalence and risk of varicose veins

Level of prevalence among staff nurse 4 (8%) and ward attendant 2 (4%) were at high prevalence, all surgeons and laboratory technicians had low level of prevalence. Presence of bluish prominent vessels among employees falls in rank order 1st& oozing /bleeding from affected leg found in rank 10th. According to symptoms rank order, most of the employees had leg pain during strenuous activity among hospital employees falls in rank order 1st& burning sensation in affected leg was found in rank 10th. Majority of the hospital employees 199 (98%) had low risk of varicose veins and 1 (2%) employee had high risk of disease. Surgeons, staff nurses and lab technicians were at low level of prevalence 50 (100%), among ward attendant 49 (98 %) had low risk as well as 1(2%) high risk of diseases found statistically. Hence it is inferred that majority of the employees were at low risk only one (2%) of ward attendant were at high risk of disease. It can be concluded that majority of the employees having sitting and standing job falls

Table 1. Frequency, percentage and rank order of signs of varicose veins among Hospital Employees N=200

Signs	Prevalence Among Hospital Employees								Rank Order
	Surgeons		Staff nurses		Lab tech.		Wd Attd		
	n	%	n	%	n	%	n	%	
Blue prominent vessels	10	20	21	42	16	32	18	36	1
Dilated capillaries	4	8	12	24	9	18	4	8	3
Presence of spider veins	4	8	8	16	8	16	1	2	4
Edema	10	20	10	20	7	14	15	30	2
Change in skin texture	1	2	3	6	2	4	5	10	6
Change in color	2	4	4	8	2	4	5	10	5
Change in temp.	0	0	3	6	1	2	4	8	7
Presence of ulcers	1	2	3	6	2	4	0	0	8
Skin changes with ulcers	1	2	1	2	0	0	0	0	9
Oozing/bleeding from affected leg	0	0	1	2	0	0	0	0	10

Maximum Score=10 Minimum Score=0



Prevalence Score of Varicose Veins Among Hospital Employees

Table 2. Frequency and Percentage Distribution of Hospital Employees According to Risk N=200

	Risk Among Hospital Employees							
	Surgeons		Staff Nurses		Laboratory tech.		Ward attendant	
	n	%	n	%	n	%	n	%
High	0	0	0	0	0	0	1	2
Low	50	100	50	100	50	100	49	98

Maximum Score=16, Minimum score=0

Hospital Employees According to Risk

Table 3. Mean, Mean Percentage and rank order of symptoms of varicose veins among Hospital Employees N= 200

Symptoms	Prevalence Among Hospital Employees								
	Surgeons		Staff nurses		Lab. Tech.		Wd .attendant		R. order
	mean	mean%	Mean	mean%	mean	mean%	Mean	mean%	
Leg pain while sitting/standing	0.67	22.22	1.06	35.33	0.56	18.67	1.12	37.33	2
Leg pain at rest	0.27	9.15	0.66	22.00	0.18	6.00	0.28	9.33	6
Leg pain during strenuous activity	0.78	26.14	0.96	32.00	1.08	36.00	1.14	38.00	1
Cramps in legs	0.63	20.92	0.96	32.00	0.62	20.67	0.64	21.33	3
Relief of leg pain while walking	0.31	10.46	0.86	28.67	0.80	26.67	0.42	14.00	5
Leg discomfort/fatigue	0.49	16.34	0.80	26.67	0.54	18.00	0.68	22.67	4
Heaviness of legs	0.20	6.54	0.54	18.00	0.26	8.67	0.22	7.33	7
Numbness in legs	0.22	7.19	0.42	14.00	0.32	10.67	0.08	2.67	8
Burning sensation in affected Leg	0.18	5.88	0.12	4.00	0.04	1.33	0.04	1.33	10
Dependant edema	0.25	8.50	0.36	12.00	0.10	3.33	0.28	9.33	9

in rank 1st and lowest rank order 14th is among employees with smoking >one packet/day and use of alcohol >30ml/day.

SECTION III: Findings Related to Knowledge of Varicose Veins

Objective 5. Deficits of Knowledge on Varicose Veins depicts knowledge among surgeons (88%) had good knowledge & (12%) were having average knowledge staff nurses (72%) had good level of knowledge about varicose veins (26%) with average knowledge & (2%) had below average knowledge laboratory technicians (68%) had good

knowledge & (32%) had average knowledge. Among ward attendant only (18%) had good knowledge, (14%) with average knowledge and (68%) had below average knowledge. Hence it was concluded that majority of the employees had average knowledge so they are more prone to have varicose veins due to less knowledge.

Average knowledge and 68% had below average knowledge. High deficits were calculated in management area basis of that pamphlet was prepared.

Table 4. Frequency and Percentage Distribution and Rank Order of Risk Factors of Varicose Veins Among Hospital Employees

Risk factors	Hospital Employees								R. order
	Surgeons		Staff Nurses		Laboratory technicians		Ward Attendants		
	n	%	n	%	n	%	n	%	
Family history	3	6	8	16	10	20	4	8	7
Do smoking	0	0	3	6	9	18	6	12	9
Exposure to smoke	8	16	9	18	20	40	21	42	4
Consume alcohol<30ml/day	12	24	2	4	22	44	13	26	5
Constipation	3	6	9	18	5	10	3	6	8
Not Rx for constipation	0	0	7	14	1	2	3	6	10
Stand for >4hours	43	86	45	90	44	88	41	82	2
Assume sitting/standing position on duty	47	94	42	84	49	98	49	98	1
Irregular exercise	22	44	16	32	17	34	4	8	3
Irregular brisk walk	10	20	15	30	12	24	3	6	6
V.V during hospitalization	0	0	3	6	1	2	1	2	12
Hospitalization with DVT	1	2	2	4	1	2	0	0	13
Experienced during pregnancy	1	2	5	10	0	0	3	6	11
Take Oral Contraceptives	3	6	2	4	0	0	6	12	10
Smoke >one packet per day	0	0	0	0	1	2	1	2	14
Consume alcohol >30ml/day	0	0	0	0	2	4	0	0	14

Maximum score=16 minimum score=0

Table 5. Frequency and Percentage Distribution of Hospital Employees According to Levels of Knowledge of Varicose Veins N=200

Levels of Knowledge	Hospital Employees							
	Surgeons		Staff Nurses		Lab. Technicians		Ward attendant	
	n	%	n	%	n	%	n	%
Good	44	88.00	36	72.00	34	68.00	9	18.00
Average	6	12.00	13	26.00	16	32.00	7	14.00
Below average	0	0.00	1	2.00	0	0.00	34	68.00

Maximum Score = 24 Minimum Score =0

Table 6. Mean, Mean Percentage, and Rank Order of Deficit areas of Knowledge among Hospital Employees N=200

Area of knowledge	Hospital Employees										
	Surgeons			Staff Nurses			Lab. technicians		Ward attendants		R.order
	Max. score	mean	mean%	mean	mean%	mean	mean%	mean	mean%		
Introduction	2	0.32	16	0.50	25	0.64	32	1.12	56	6	
Causes & RF's	5	0.56	11.20	1.62	32.40	1.86	37.20	3.48	69.60	3	
Signs & Symptoms	3	0.24	8.00	0.54	18	0.52	17.33	2	66.67	5	
Diagnostic evaluation	2	0.38	19	0.34	17	0.9	45	1.2	60	7	
Management	2	0.30	15	0.42	21	0.88	44	1.52	76	1	
Prevention	7	1.04	14.86	1.84	26.29	1.04	14.86	4.56	65.14	2	
Complications	3	0.22	7.33	0.80	26.67	0.68	22.67	2	66.67	4	

Maximum Score =24 Minimum Score =0

Conclusion of the study

Above findings shows that high prevalence among staff nurses and ward attendants was found and high risk was identified among ward attendants. Association of prevalence and risk with variables was also analyzed and Knowledge deficits were also calculated and found high among management.

Recommendations

- Similar study can be replicated on a large sample to validate and generalize the findings.
- The study may be conducted at different settings and different target population.
- Similar study can be conducted to assess knowledge regarding risk factors and prevention among general population.
- Diagnostic evaluation can be determined for confirmation of disease.
- A comparative study can be done to evaluate the prevalence among hospital employees of two hospitals

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