



“A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF VARICOSE VEIN AMONG SECURITY GUARDS IN SELECTED SECURITY RECRUITMENT AGENCY, KANPUR NAGAR.”

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ABSTRACT

A study to assess the effectiveness of structured teaching program on knowledge regarding prevention and management of varicose veins among security guards in selected security recruitment agency, Kanpur Nagar.

Nurses are an integral component of health care delivery system. In discharging the duties, nurses encounter a variety of occupational health problems, which may be categorized in to biological hazards, physical hazards and psychological hazards.

Objectives: Assess the knowledge on prevention and management of varicose veins among security guards. Evaluate the effectiveness of structured teaching program on knowledge regarding prevention and management of varicose Veins. Determine the association between knowledge scores of security guards on prevention and management of varicose veins with selected demographic variables.

Research Methodology: The study was conducted in security recruitment agency, Kanpur nagar and the research method adopted was Pre experimental one group Pre-test and Post- test design. As per the inclusion criteria, 50 samples were selected. The pre-test score of knowledge was assessed by a selfstructured questionnaire. A structured teaching program on prevention and management of varicose veins (duration of 30-45 minutes) was given and the post-test assessment was done on the 7th dayby using the same tool.

Results: The study finding revealed an increase in the knowledge level following the structured teaching program. In this study, the statistical analysis showed that there was a significant improvement ($t = 29.25, p < 0.05$), in the level of knowledge after implementation of structured teaching program and significant association ($\chi^2 = 5.091, p < 0.05$) between pretest score of knowledge on prevention and management of varicose veins with age, professional education and years of experience.

Conclusion: Structured teaching program was helpful in improving knowledge among security guards regarding prevention and management of varicose veins.

Key words:

Effectiveness, structured teaching program, varicose veins.

CHAPTER-I

INTRODUCTIO

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Varicose veins are swollen, twisted and sometimes painful veins that have filled with an abnormal collection of blood. The definition of varicose vein is veins with incompetent valves that are enlarged tortuous and thickened. An estimated 10-20% of the general population has varicose veins. Varicose veins are caused by the development of weak or faulty valves inside veins.¹

Varicose veins are known to be more common among profession such as police men, teachers, nurses, security guards, shopkeepers and bus conductors who have to stand for a long time daily.²

A growing number of security guards are suffering from varicose veins, a painful ailment which often develops due to high pressure while standing and walking. The only way to avoid the varicosevein among security guards is to follows the preventive measures.²

BACKGROUND OF THE STUDY:

Varicose veins are swollen, twisted and sometimes painful veins that have filled with an abnormal collection of blood. The definition of varicose vein is veins with incompetent valves that are enlarged tortuous and thickened. An estimated 10-20% of the general population has varicose veins. Varicose veins are caused by the development of weak or faulty valves inside veins.¹

Varicose veins are known to be more common among profession such as police men, teachers, nurses, shopkeepers and bus conductors who have to stand for a long time daily.²

A growing number of security guards are suffering from varicose veins, a painful ailment which often develops due to high pressure while standing and walking. The only way to avoid the varicose vein among security guards is to follow the preventive measures.²

NEED FOR THE PRESENT STUDY

Millions of workers spend majority of the working day on their feet and many hours in static positions. Standing uses 20% more energy than sitting and because human bodies are not designed to stand at work, prolonged standing, can lead to tiredness, loss of concentration and increased health risks. These risks include the swelling of feet and legs, feet and joint damage, varicose veins, heart and circulatory disorders, lower back problems and pregnancy complications. Severe varicose veins can have an impact on the lives of the people who work on their feet especially the security guards, teachers, nursing staffs, flight attendants, dental staff, traffic and bar workers, postal workers, construction workers and bank staff.³

Standing is a daily activity for us but standing for hours on a daily basis can cause several body complaints. Security guards, sales persons, teachers, traffic enforcers, nurses are people who have jobs that require prolonged standing in the performance of their duties. Prolonged standing causes muscles strain at the same time blood remains in the legs and feet and cannot properly circulate. This results in inflammation of the veins and over time, this can progress to varicose veins. The veins become dilated and this will prevent further circulation of the blood going to the heart.⁴

Varicose vein statistics

Prevalence of visible varicose veins in the **Western** population older than 15 years of age is 10% to 15% for men and 20% to 25% in women. Prevalence rates in the US are 15% (range from 7% to 40%) in men and 27.7% (25% to 32%) in women.⁵

The prevalence of varicose veins increases with age. In 1 study, 40-year-olds had a prevalence of 22%, 50-year-olds a prevalence of 35%, and 60-year-olds a prevalence of 41%.⁵

According to one estimate, 15 to 20 per cent of the population in India is suffering from varicose vein disease these days. Women suffer from this disease four times more than men. Computer professionals, Nurses, Receptionists, Security guards, Traffic policemen, Salesmen, Teachers and persons doing Desk jobs are the worst sufferers of Varicose veins.⁶

According to experts in vascular diseases, three to five per cent of the population suffers from severe venous problems. In India varicose veins affect 1 out of 2 people over age 50, whose occupation requires prolonged standing. In Bangalore 3-5% of population suffers from venous problems, 10% of population is having varicose vein.⁶

A cross sectional study was done to know the prevalence of varicose vein in Karnataka. Total numbers of 3402 patients were examined for oral and other varices. Oral varices were much more common than varicosities of other veins. Varices were found to increase with age. Overall prevalence rate was 59.3 per 1000. This rate was highest in the about 60 years age group being 329.94 per 1000. The study shows that old age people are more prone to get varicose vein compare to younger.⁷

Prevention is a key factor related to varicose veins. The nurse should instruct the security guards to avoid sitting or standing for long periods of time, maintain ideal body weight, take precautions against injury to the extremities, avoid wearing constricting clothing, and participate in a daily walking program.⁸

The security guards should avoid activities that cause venous stasis such as wearing tight socks or a constricting panty girdle, crossing the legs at the thighs and sitting or standing for long periods. Changing position frequently, elevating the legs when they are tired, and getting up to walk for several minutes of every hour promote circulation. The security guards should be encouraged to walk 1 or 2 miles each day if there are no contraindications. Walking up the stairs rather than using the elevator or escalator is helpful in promoting circulation. Swimming is also good exercise for the legs.⁸

From the above studies and statistics it is clear that varicose veins are increasing worldwide. Since

the security guard spends most of the time standing they are prone to get lower limb symptoms like itchiness, cramps, burning sensation, and pain especially when standing. They result in superficial swollen veins, which later develop to varicose veins. So there is a need to educate the security guards regarding this condition in order to prevent it. This urged the investigator to take up the present study with an intention to provide structured teaching program on knowledge regarding prevention and management of varicose vein.

CHAPTER-II OBJECTIVES

Statement of the problem:

2. Evaluate the effectiveness of structured teaching program on knowledge regarding A study to assess the effectiveness of structured teaching program on knowledge regarding prevention and management of varicose veins among security guards in selected security recruitment agency, Kanpur Nagar.

Objectives of the study:

1. Assess the knowledge on prevention and management of varicose veins among security guards.
prevention and management of varicose Veins.
3. Determine the association between knowledge scores of security guards on prevention and management of varicose veins with selected demographic variables.

Assumptions of the study:

1. Security guards working in security recruitment agency have more risk of developing varicose veins.
2. Education about prevention and management of varicose veins has increased the knowledge of security guards to reduce their occurrence as well as prevent the complications of varicose veins.

Hypothesis:

H₁: There will be a significant difference on mean post- test and mean pre- test level of knowledge on prevention and management of varicose veins among security guards.

H₂: There will be significant association between the knowledge of prevention and management of varicose veins and their selected demographic variables of the respondents.

Delimitation:

- The study population was delimited to the security guards who are working in security recruitment agency.

Operational Definitions:

Assess: To estimate or determine the significance, importance or value of structured teaching program regarding prevention and management of varicose vein among security guards before and after the implementation of structured teaching program.

Effectiveness: It refers to the extent to which the structured teaching Program on prevention and management of varicose veins has achieved the desired effect as gain in knowledge scores by security guards.

Structured teaching program on prevention and management: It refers to organized group teaching to impart knowledge for security guards regarding prevention and management of varicose vein. It includes meaning, incidence, prevalence, risk factors, causes, diagnostic measures, treatment and preventive measures of varicose veins.

Prevention: It refers to hindering the fact from happening, by following preventive measures one can able to avoid the occurrence of disease. Avoiding standing and sitting for prolonged time, elevation of foot after prolonged standing and sitting, leg exercise, swimming, maintaining appropriate body weight, elevating the legs periodically, wearing compression stockings and clothing choices and walking these will help to prevent the occurrence of varicose vein.

Management: Management includes leg exercises, elevation of foot after prolonged standing and sitting, sclera therapy, thermal ablation, elastic compression, and radio frequency.

Knowledge: In this study it refers to correct responses given by security guards for knowledge items in the structured questionnaire regarding prevention and management of varicose veins and is expressed in terms of knowledge scores.

Varicose vein: In this study it refers to bluish or purplish enlarged or dilated veins that are superficial and most commonly seen in the legs, feet and thighs. They are often painful when standing or walking.

Security guards: In this study it refers to the security guards who are in the age group of above 21 years working in selected security recruitment agency, Kanpur Nagar.

Security recruitment agency: It refers to an organization which is recognized by government were providing in any manner for recruitment or supply of manpower.

Projected Outcome:

Structured teaching program could help to improve the knowledge of the security guards on prevention and management of varicose veins.

Conceptual frame work:

The conceptual framework for this study was derived from general system model (**Ludwig Von Bertalanffy, 1968**). It is regarded as a universal grand theory because of its unique relevancy and applicability. It is composed of both structural and functional components that interact within a boundary that filters the type and rate of exchange with the environment. Living system terms are open because there is an ongoing exchange of matter, energy, and information. Through the process of selecting the system which regulates the type and the amount of input through self-regulation to maintain the system equilibrium or homeostasis. Some types of input are used immediately in their original state where as the other complex transformations are continuously processed through the system and released as output. The following components in the modified general system model are as follows:

Input: Input is the information needed by the system. It is a matter, energy and information received from the environment. In this study, input is considered as the assessment of knowledge of staff nurses and administration of structured teaching program. It includes demographic variables and knowledge was evaluated based upon pre-test structured questionnaires regarding prevention and management of varicose veins.

Through put: Through put is the activity phase. It is a matter, energy and information that is modified or transformed within the system. It is the process by which the system processes the input and releases an output. It is a process that allows input to change. It includes the provision of a structured teaching program with the help of computer aided tools for the security guards who are working in security recruitment agency.

Output: It is an energy, matter and information that leave a system into the environment. In the present study it is the change in knowledge that is obtained by structured teaching program on prevention and management of varicose veins. The information is continuously processed through the system and released as output in an altered state. It includes evaluation of the security guard knowledge on prevention and management of varicose veins with the same structured questionnaire to bring changes in the level of knowledge of the security guards.

Feedback: It is the response of the environment to the system. Feedback may be positive or negative or neutral. It is necessary to strengthen the input and throughput and modify them as desired when the results show any inadequate knowledge of security guards on prevention and management of varicose veins.

CHAPTER-III REVIEW OF LITERATURE

A literature review is a description and analysis of the literature relevant to a particular field or topic. It gives an overview of what has been said, who the key writers are, what are the prevailing theories and hypotheses, what questions are being asked and what methodologies are appropriate and useful.

Review of literature is the writings of recognized authorities and of previous research which provides the evidence that the researcher is familiar with what is already known and what is still unknown. Citing studies that show substantial agreement and those that seem to prevent conflicting conclusions helps to sharpen and define understanding of the existing knowledge in the problem area, provides background for the research project and makes the reader aware of the status of the issue.

This chapter consists of literature and research studies related to:

Literature related to the risk factors and prevention of varicose vein
Literature related to knowledge on prevention and management of varicose veins
Literature related to effectiveness of structured teaching program.

Review of literature related to incidence and prevalence of varicose vein

A study on “Prevalence of varicose veins in the lower limbs among 280 women working at a departmental store”. In this study women with varicose veins of all types were compared to women without varicose veins, women who were older, more often obese, had positive family history, high blood pressure, lower levels of physical activity, women with at least one pregnancy and women standing at work and sitting at work. The study revealed that 82% women standing at work had higher prevalence of varicose veins⁹.

A study to assess “The prevalence and the extent of treatment of varicose veins in a Finnish population”. A random sample of 166 individuals was studied clinically. The results revealed the life time prevalence of varicose veins was 18% for men and 32% for women, with an increasing prevalence in relation to age. 25% of the men and 41% of the women who reported varicose veins had received treatment.

A cross sectional study was done to assess the prevalence of varicose veins, risk factors and the complications of varicose veins among 100 school teachers. The study showed the prevalence of varicose vein was 19% among the school teachers. Among those affected with varicose veins, 89.5% had history of standing for long duration. Ratio of 26.3% had complications from this disease. Thus conclusion was made that standing for long hours was a major risk factor as compared to other known risk factors¹¹.

A cross sectional study was conducted among traffic police in 12 areas in Ahmadabad which revealed that 77% of the 138 traffic police suffered from varicosity or enlargement of the veins of legs. Among these 107 nearly 84 people suffered from spider webs, the first stage of varicose veins. While 23 had severely established varicose veins which means they suffered from severe aches, swelling and heaviness in the legs. This study concluded that varicose veins is a condition that makes walking and standing extremely difficult and painful and if treated early at the stage of spider veins they are preventable¹².

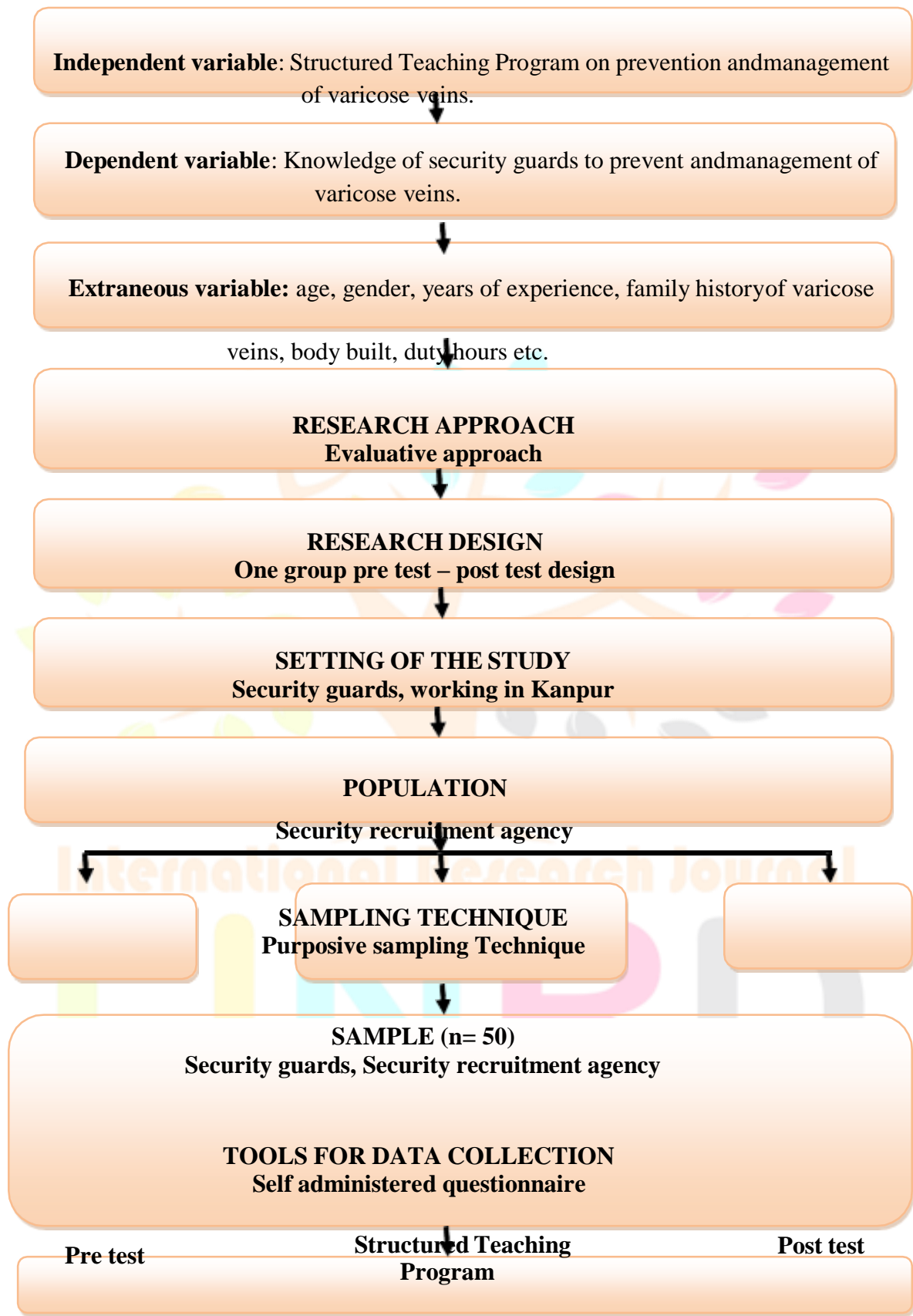
A cross sectional population study which was conducted to 1566 people (699 men and 867 women) aged 18-64 selected from the computerized age sex registers. The results showed that women were significantly more likely to report lower limb symptoms such as heaviness or tension (54.7%), swelling (24.6%), aching (63.1%), restless legs (49.6%), cramps (45.5%), and itching (38%). The prevalence of symptoms tended to increase with age in both sexes. The researcher concluded that varicose vein was a major problem in growing population.

Review of literature related to prevention and management of varicose vein.

A study on “Effect of elastic compression stocking on prevention of edema in patients with varicose veins”. The results showed all stockings significantly reduced the foot volume when compared with no stockings and concluded that elastic stockings even with a pressure as low as 8mm Hg can prevent edema in patients with varicose veins and 3-40 mmHg stockings were better at preventing foot edema¹⁴.

An experimental study was conducted on the effects of Graduated Compression Stockings on Cutaneous Surface Pressure along the Path of Main Superficial Veins of lower limb. The study participants were instructed to wear each stocking type in the following 7 static postures: standing; standing with knee flexion; tip-toe standing; sitting with 90-degree knee flexion, sitting with leg straight; supine resting with slight elevation of the heel; and supine with knee flexion. The result shows that the flexion exercise of joints and muscle activity of the lower limbs provided more support and compression on the superficial venous system¹⁵.

Variables of the study:



DATA ANALYSIS

- Frequency, percentage, mean, standard deviation of knowledge.
- Percentage distribution of knowledge
- Paired 't' test to find effectiveness of structured teaching program.
- Chi square test to find association between demographic variables

FINDINGS AND CONCLUSION

Figure 4.1: Schematic representation on research process



Setting of the study:

Security recruitment agency is located in Kanpur Nagar. The study was conducted among fifty security guards in security recruitment agency.

Population and sampling:

The security guards working in security recruitment agency were selected for study. The study samples were selected based on sampling criteria.

Sampling techniques:

Purposive sampling technique was adopted for selecting the sample.

Samples:

The security guards working in selected security recruitment agency. A total of 50 samples were selected.

Sampling criteria: Inclusion Criteria:

1. Security guards who had more than one year experiences.
2. Security guards who are willing to participate in the study

Instrument and tools for data collection:

The instrument used for the collection of data was self-administered questionnaire. The tool consist of two sections, in section A the questions were about the personal information about the sample. In section B the questions are on the knowledge on prevention and management of varicose veins.

Section A: Demographic Data (it consists of personal information such as age in years, gender, educational status, year of experiences, family history of varicose veins, duty hours, doing regular exercises etc.)

Section B: Knowledge on prevention and management of varicose veins.

Part -1 Questions related to knowledge on factors related to varicose veins (11)

Part -2 Questions related to knowledge on management of varicos veins (13) Part -3 Questions

related to knowledge on prevention of varicose veins (06)

Total numbers of questions were 30 each question carries one mark, total mark was 30

(Annexure IV)

Interpretation of score:

The level of knowledge was interpreted as follows:

Level of knowledge

Adequate knowledge	= 21-30	(70-100%)
Moderately adequate knowledge	= 11-20	(37-67%)
Inadequate knowledge	= 0-10	(0-33%)

Validity and reliability of tool:

The validity of the tool has been determined by expert opinion from different fields along with the objectives of the study. The experts were requested to give their opinion, clarity and appropriateness, suggestions for the modification of the tool and were incorporated in the final tool.

The tool which was used for the study was structured questionnaires, the reliability and the practicability of the tool was tested through pilot study by using split half method. It was computed using Karl Pearson's correlation coefficient method. The reliability of the tool was $r = 0.88$. The tool was found to be reliable and feasible.

Technique of data collection:

Data collection was done from 06.01.2023 to 15.02.2023. The samples were selected from security recruitment agency. Data was collected using self structured questionnaire.

The total Number of 50 security guards was divided into two categories. Each group consists of 25 security guards. At the starting of teaching schedule pretest was conducted with the self administered questionnaire. Then each day 10 security guards were called for a class for 45 minutes. Education was given with the help of LCD. Doubts were cleared at the end of the teaching. Seven days after the education, reassessment was done with the same set of questionnaire.

Data collection procedure:

Data was collected from security recruitment agency. Samples who met the inclusion criteria were selected by using the purposive sampling techniques for the study. After selecting the sample, data was collected through questionnaire method.

Steps in data collection:

- Introduction to the research and consent was obtained from the samples.
- Collected the demographic data from the samples.
- Administered the knowledge questionnaire to the samples.
- After the pre-test observation, the required education was given with the help of computer aided tools.
- Post test was conducted with the same questionnaire.

Ethical approval:

Ethical clearance from the Institutional Human Ethics Committee of PSGIMSR was obtained to conduct the study. A written permission was obtained from the ethical committee, Kanpur. The ethical approval certificate is attached in the annexure I.

Report on the pilot study:

Pilot study was conducted to test the practicability of the tool and feasibility of tool of conducting the study. It was conducted for a period of one week from 06.01.23 to 13-01-23, from security recruitment agency. For pilot study 10 security guard were selected based upon purposive sampling and according to the inclusion criteria. Pre test was conducted on 06.01.23. From the first day onwards intervention was carried out that is structured teaching on definition, causes, risk factors, clinical manifestations, diagnostic evaluation, medical surgical and nursing management, prevention and exercises to prevent varicose veins. The post test was conducted after 7 days on 14.01.23.

The data were tabulated and analyzed using descriptive and inferential statistics. The scores were tabulated based on the mean, standard deviation, paired 't' test and chi-square test. The 'r' value is 0.88 and the results revealed that there is a significant improvement in the knowledge of security guards regarding prevention and management of varicose veins.

Changes brought after the pilot study:

There was no difficulties faced during the pilot study and no changes have made after pilot study.

Data analysis plan:

The collected data will be analyzed by using the appropriate descriptive and inferential statistics method.

Descriptive statistics:

- Demographic data will be analyzed using frequency and percentage.
- Frequency and percentage will be used for the distribution of samples based on their knowledge regarding

prevention and management of varicose veins.

- Mean and standard derivation will be used to assess pre and post-test knowledge of security guards regarding prevention and management of varicose veins.

Inferential statistics:

- Paired 't' test will be used to evaluate the effectiveness of structured teaching program on the knowledge of security guards regarding prevention and management of varicose veins.
- Chi-square test will be used to find an association between pre-test evaluation of security guards regarding prevention and management of varicose veins and their selected demographic variables.

Chapter summary:

This chapter discussed about the material and methodology followed in the present study. The method used was a one group pre and post –test design. This chapter also dealt with the sample population, sample size, regarding the instruments used and data collection methods. The next chapter will deal on data analysis and interpretation.

CHAPTER V RESULT

Data analysis is the systematic organization and synthesis of research data and testing of research hypothesis using those data. Interpretation is the process of making sense of the result of the study and examining their implications. Analysis is the method of rendering qualitative data as easily understandable and providing intelligent information about the research problem which will be helpful to study and test the relationship between the variables.

In this study, the effectiveness of structured teaching program on knowledge regarding prevention and management of varicose veins among security guards working in security recruitment agency was assessed. The data was collected, assembled, analyzed and tested individually and described. The findings based on the statistical analysis, presented in this chapter are based on objectives.

Section A: Demographic variables of security guards and assessment of knowledge of security guards regarding prevention and management of varicose veins.

- Frequency and percentage distribution of security guards according to their demographic data.
- Item wise analysis of frequency and percentage distribution of security guards according to their knowledge score regarding prevention and management of varicose veins.
- Frequency and percentage distribution of security guards according to their pre and post - test knowledge scores regarding prevention and management of varicose veins.

Section B: Effectiveness of structured teaching program

- The effectiveness of the structured teaching program on knowledge regarding prevention and management of varicose veins.

Section C: Association between pre test knowledge score and their selected demographic variables

- Association between pre-test knowledge scores of security guards on prevention and management of varicose veins with selected demographic variables.

Section A: Demographic variables of security guards and assessment of knowledge of security guards regarding prevention and management of varicose veins.**Table 5. 1: Frequency and percentage distribution of security guards according to their demographic data****n = 50**

Demographic Data	Frequency (f)	Percentage(%)
Age		
21-30 years	22	44
31-40 years	25	50
41-50 years	3	06
Gender		
Male	42	84
Female	8	16
Marital Status		
Unmarried	6	12
Married	44	88
Education		
High school	36	72
Intermediate	14	28
Year of Experience		
0-2 years	19	38
2-4 years	28	56
4-6 years	3	06
Family History of Varicose Veins		
Yes	10	20
No	40	80
History of varicose veins		
Yes	02	04
No	48	96
Demographic Data	Frequency(f)	Percentage(%)

Duty Hours		
8 Hours	50	100
Doing Regular Exercise		
Yes	8	16
No	42	84
Body Mass Index		
Normal Weight	32	64
Over Weight	03	06
Under Weight	15	30

It is observed that 50 security guards were selected for study, among them (22) 44 % of the security guards were in the age group of 21 to 30 years and (25) 50 % of the security guards were in the age group of 31- 40 years and only (3) 6 % of security guards were between 41 to 50 years of age . The male gender as (42) 84% of the study samples were male and the remaining (8) 16 % were Female. Major portion of the study samples (44) 88% were Married and (6) 12 % were unmarried. High school education were large in number (36) (72%) however, the intermediate education constitute a sizeable number (14) (28%) in the study sample.

The respondents with more experience were less in number as (19) 38 % of security guards have less than 2 years of experience and (3) 6 % security guards have 4 to 6 years of experience and remaining (28) 56 % of them have 2- 4 years of experience. Among 50 of them all (100%) were doing 8 hours duty, that is forty three security guards were working in shift duty pattern (7 am to 2pm, 1 pm to 8 pm and 7 pm to 7am) without rest hours whereas seven security guards are working routine duty pattern (7 am to 4 pm, 7 am to 1 pm and 4 pm to 7 pm) and (7 pm to 7 am) with rest hours. Among 50 security guards (8) 16 % security guards were doing exercise regularly and (32) 44 % of them with normal weight and (3) 6 % were overweight and (15) 30% were under weight.

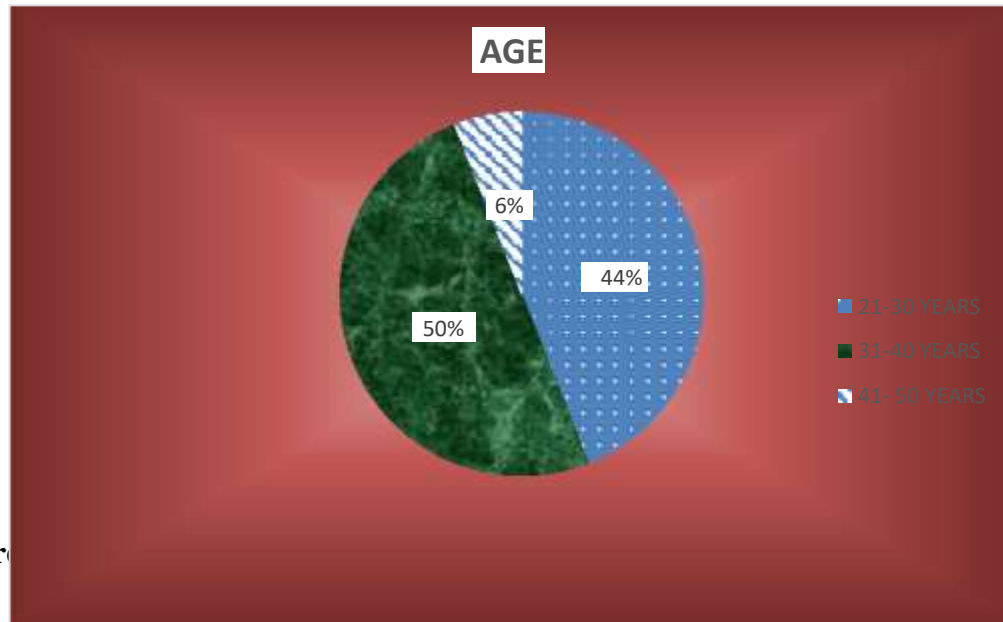


Figure 5.1:

The above figure 5.1 shows that 50 % of them are between 31 to 40 years of age, 44% of them are in 21 to 30 years and 6% were between 41 to 50 years.

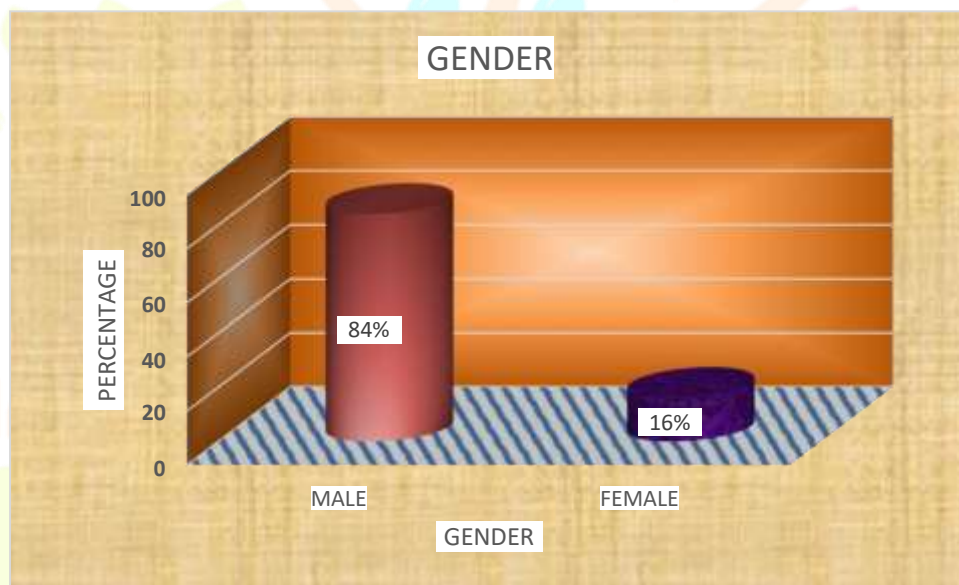


Figure 5.2: Distribution of security guards according to gender

The above figure 5.2 shows that the male gender as (42) 84% of the study samples were male and the remaining (8) 16 % were Female.

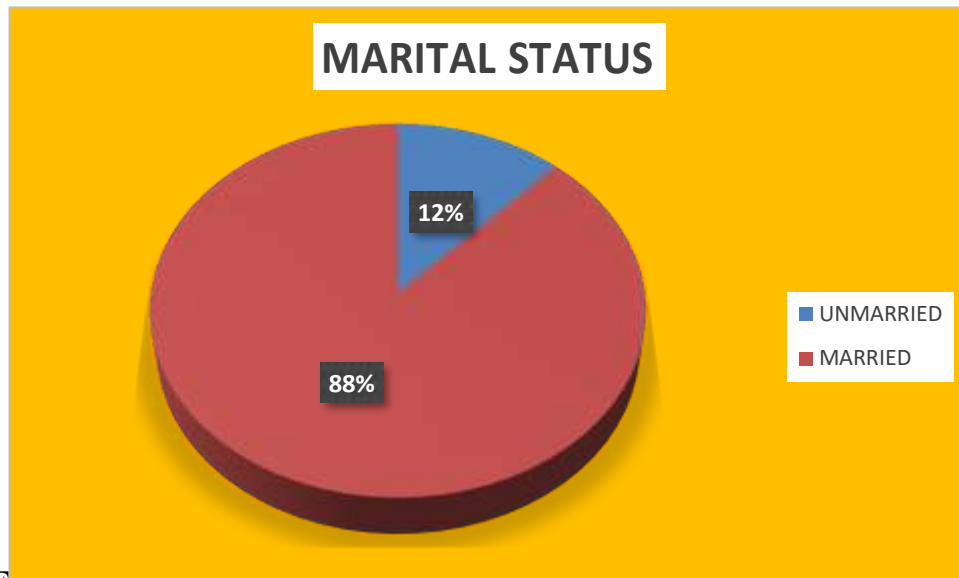


Figure 5.3: Distribution of security guards according to marital status

The above figure 5.3 shows that the major portion of the study samples (44) 88% were Married and (6) 12 % were unmarried.

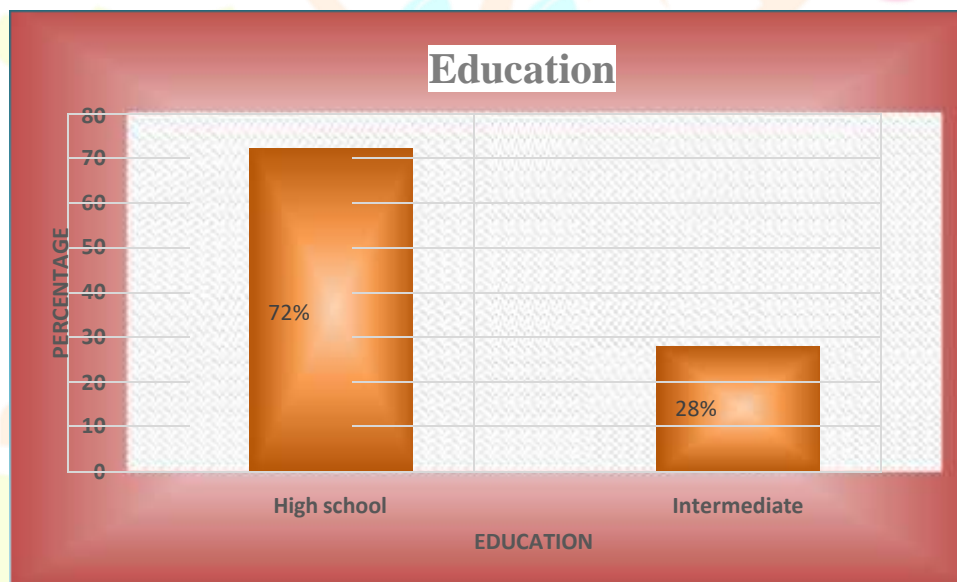
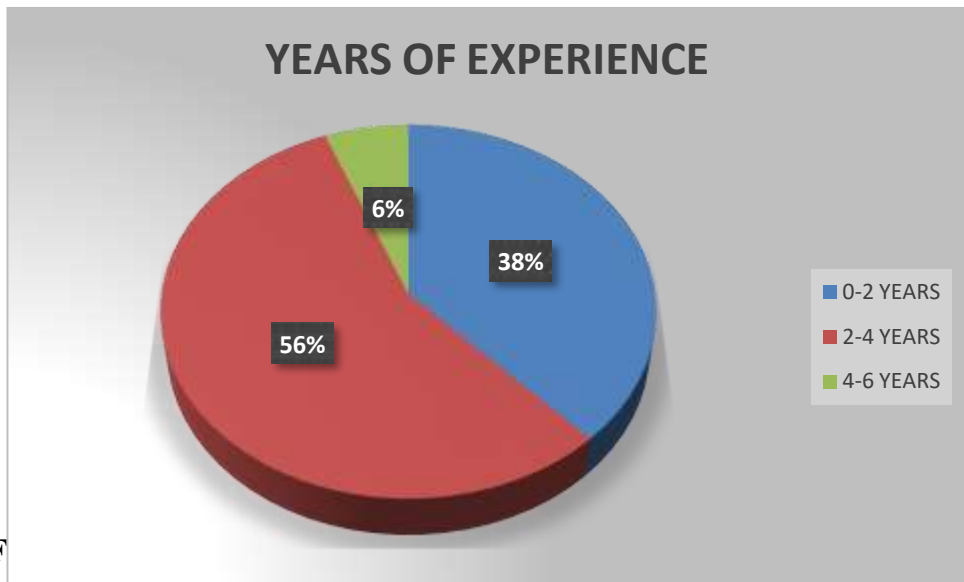


Figure 5.4: Distribution of security guards according to education

The above figure 5.4 shows that the high school education were large in number (36) (72%) however, the intermediate education constitute a sizeable number (14) (28%) in the study sample.



F **nce**

The above figure 5.5 shows that (19) 38 % of security guards have less than 2 yearsof experience and (3) 6 % security guards have 4 to 6 years of experience and remaining (28) 56 % of them have 2- 4 years of experience.

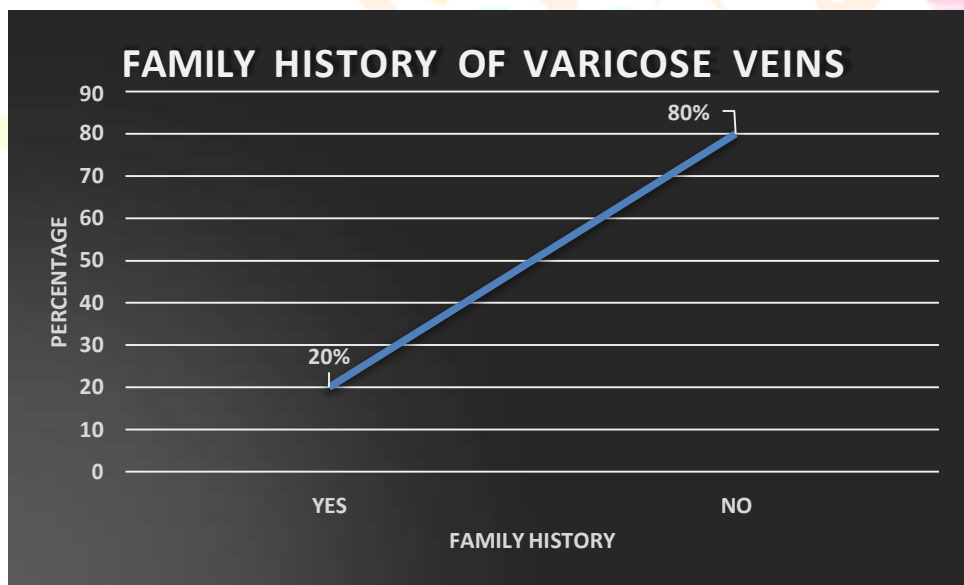


Figure 5.6: Distribution of security guards according to family history of varicose veins

The above figure 5.6 shows that 20 % of them had family history of varicose veins. They are Mill workers, Company workers and doing agriculture.

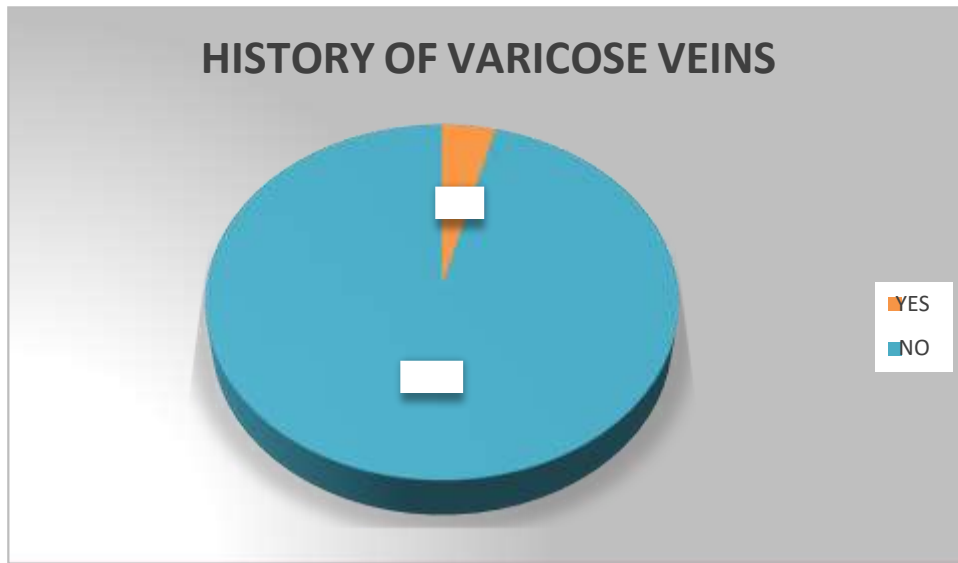


Figure 5.7: Distribution of security guards according to history of varicose veins

The above figure 5.7 only 2 (4%) had the history of varicose veins and both are wearing stockings and doing regular exercises.

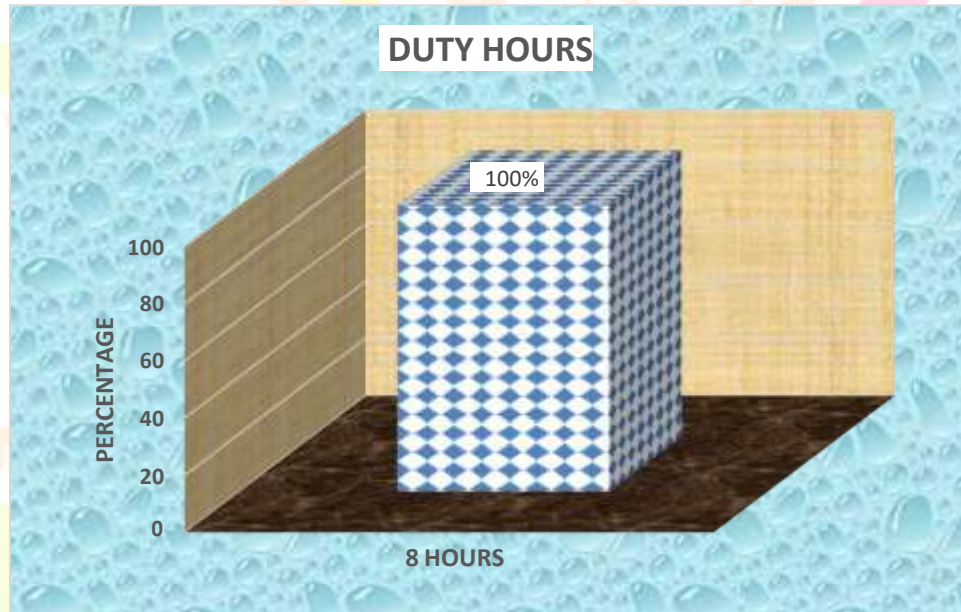


Figure 5.8: Distribution of security guards according to duty hours

The above figure 5.8 shows that among 50 of them all (100%) were doing 8 hours duty.

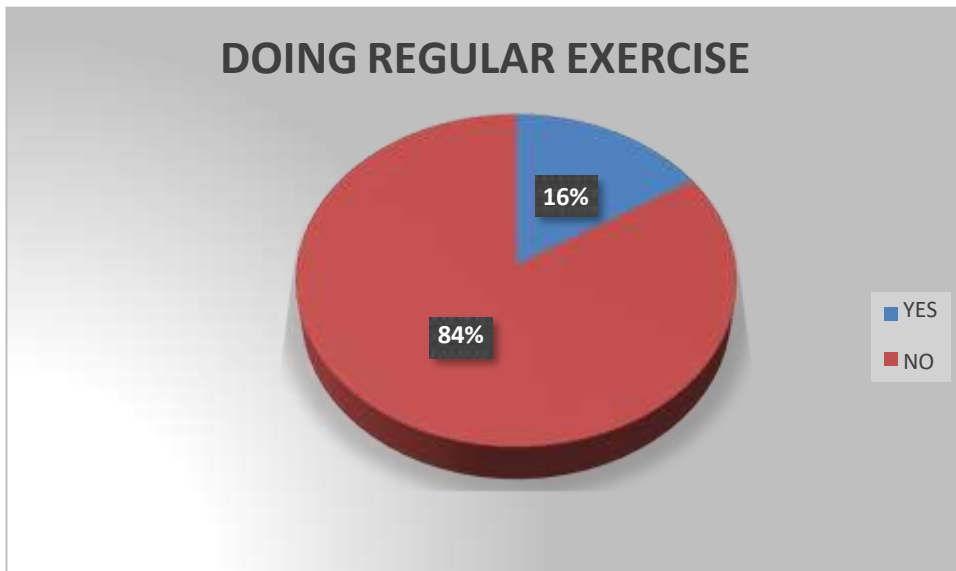


Figure 5.9: Distribution of security guards according to doing regular exercises

The above figure 5.9 shows that among 50 security guards (8) 16 % security guards were doing exercise regularly.

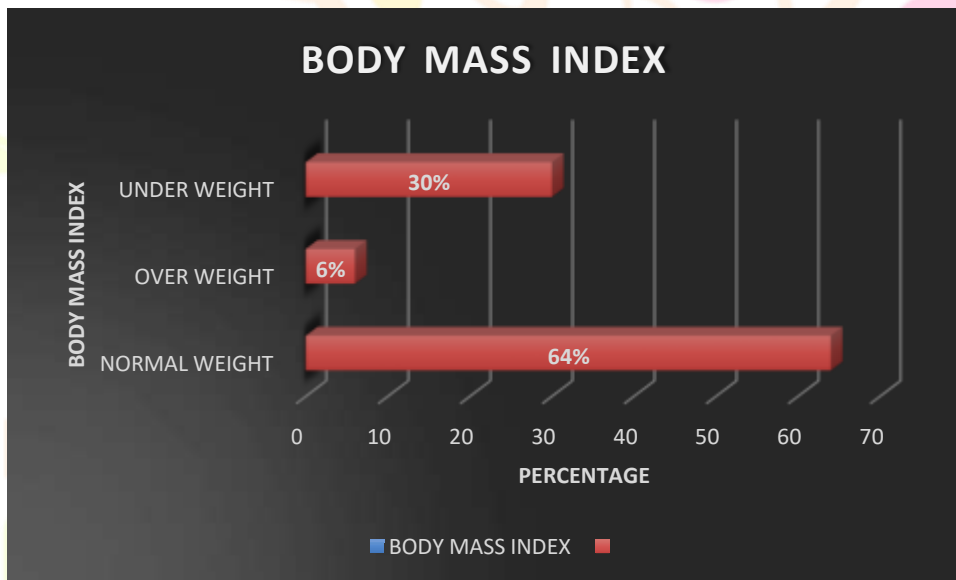


Figure 5.10: Distribution of security guards according to family history of varicose veins

The above figure 5.10 shows that among 50 security guards (32) 44 % of them with normal weight and (3) 6 % were overweight and (15) 30% were under weight.

Table 5.2 Item wise analysis Frequency and percentage distribution of security guards according to

their knowledge score regarding prevention and management of varicose veins.

n=50

S.NO	QUESTIONS	PRE TEST		POST TEST	
		f	%	f	%
A. Knowledge on Factors related to Varicose Veins					
1	Definition of varicose veins	42	84	50	100
2	Cause of varicose veins	24	48	43	86
3	Common site of occurrence of varicose veins	7	14	47	94
4	Primary varicose veins	20	40	45	90
5	The most common cause of varicose vein	45	90	50	100
6	Associated risk factor of varicose veins in female	43	86	48	96
7	Symptoms of varicose veins	19	38	45	90
8	Skin color changes of varicose veins	23	46	46	92
9	Diagnosis of varicose veins	45	90	48	96
10	Telangiectasia	41	82	50	100
11	Potential complication of spider vein	17	34	42	84
B. Knowledge on management of varicose veins					
12	Test commonly used to determine varicose veins	17	34	44	88
13	Action of diosmin used to treat varicose veins	21	42	38	76
14	Use of compression stockings	43	86	47	94
15	Contraindications of using compression stockings	37	74	43	86
16	Ideal pressure of the compression stocking to manage varicose vein	27	54	43	86
17	Reasons for advised to wear compression stocking	25	50	44	88
18	Time to remove compression stockings to prevent complications	22	44	47	94
19	Longevity to wear compression stockings for varicose veins.	8	16	41	82
20	Composite of Unna boot	27	56	43	86
21	Curative management for varicose veins	15	30	43	86
22	Measure after varicose vein surgery	41	82	45	90
23	Sclerotherapy involves in veins	35	70	43	86
24	After sclerotherapy application of elastic bandage to maintain pressure	11	22	41	82
C. Knowledge on prevention of varicose veins					
25	The leg elevation during sleep to prevent varicose veins	8	16	42	84

26	Measure not considered for prevention of varicose veins	15	30	42	84
27	The action which cannot prevent varicose veins	39	78	46	92
28	The activity to reduce pressure in lower limbs while working	16	32	44	88
29	Exercises used to prevent varicose veins	47	94	49	98
30	Exercise helps in varicose veins	2	4	40	80

The above table shows that in pre test the nurses had adequate knowledge about management of varicose veins and inadequate knowledge about the preventive measures of varicose veins and the post test scores were higher than the pre test scores.

In knowledge on factors related to varicose veins, majority of the security guards (86%) had developed adequate knowledge about the causes of varicose veins. Majority of the security guards (94%) had developed adequate knowledge about common site of occurrence of varicose veins. Majority of the security guards (90%) had developed adequate knowledge about primary varicose veins. Majority of the security guards (92%) had developed adequate knowledge about skin color changes in varicose veins. In pre test only seven security guards only known about the common site of occurrence of varicose veins and in post test majority of the security guards 47(94%) had known about it. Majority of the security guards (84%) had developed adequate knowledge about potential complication of spider vein.

In management of varicose veins majority of the security guards were not aware about the test commonly used to determine varicose veins and in post test majority of these security guards 88% had known about it. Majority of the security guards (86%) had developed adequate knowledge about ideal pressure of the compression stocking to manage varicose vein. Majority of the security guards (82%) had developed adequate knowledge about measures to prevent complications of compression stockings. In pretest only eight security guards only knew about longevity to wear compression stocking for varicose veins and in post test majority of the security 82% had known about it.

Majority of the security guards (86%) had developed adequate knowledge about composite of Unna boot and curative management of varicose veins. Majority of the security guards (82%) had developed adequate knowledge about application of elastic bandage to maintain pressure after sclerotherapy.

In prevention of varicose veins majority of the security guards were inadequate

knowledge about the preventive measures of varicose veins. In pre test only eight security guards have known about leg elevation during sleep to prevent varicose veins and in post test majority of the security guards 84% had known about it. Majority of the security guards (88%) had developed adequate knowledge about activities to reduce pressure in lower limbs while working. In pre test only two security guards only known about exercise helps in varicose veins and in post test majority of the security guards 80% had known about it.

Table 5.3: Analysis and interpretation of knowledge scores of security guards regarding prevention and management of varicose veins.

n= 50

Level of knowledge	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Adequate knowledge	0	0	44	88
Moderately adequate knowledge	38	76	6	12
Inadequate knowledge	12	24	0	0

Distribution of security guards according to their level of knowledge on prevention and management of varicose veins shows that in pre-test 38 security guards (76 %) had moderately adequate knowledge, 12 security guards (24 %) had inadequate adequate knowledge. In the post- test 44 security guards (88%) had adequate knowledge and 6 security guards (12%) had moderately adequate knowledge after the implementation of the structured teaching program.

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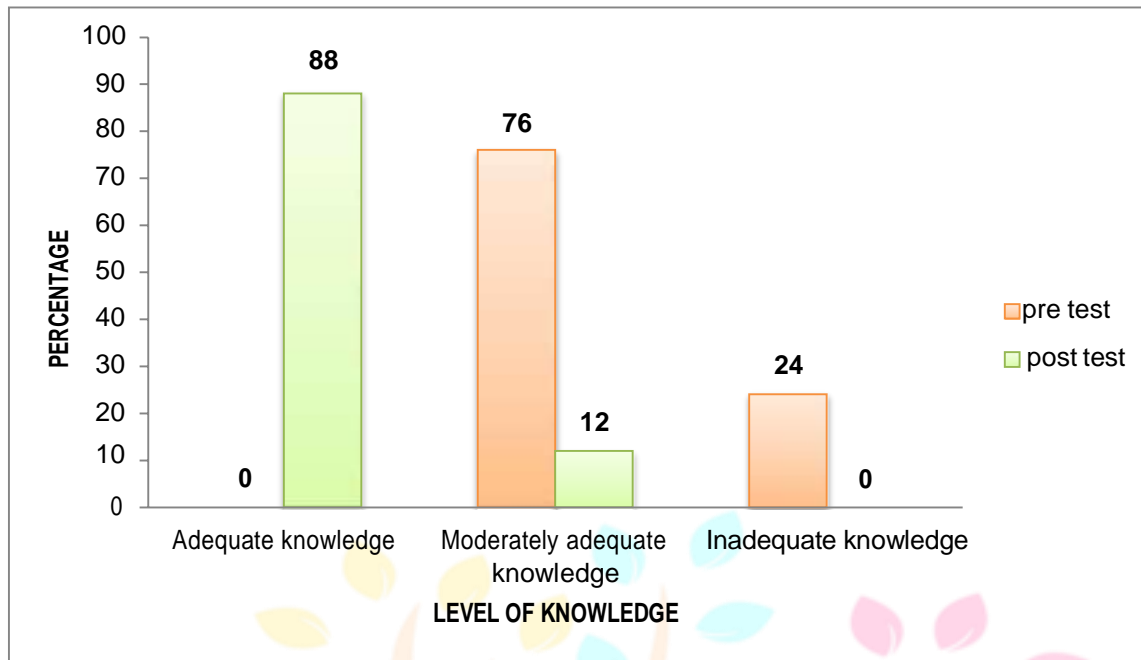


Figure 5.11: Pre and Post-test knowledge scores of security guards

Table 5.4: Aspect wise pre and post-test knowledge score of security guards regarding prevention and management of varicose veins.

n= 50

Section	Pre-test knowledge score			Post-test knowledge score		
	Inadequate knowledge	Moderately adequate knowledge	Adequate knowledge	Inadequate knowledge	Moderately adequate knowledge	Adequate knowledge
Knowledge on factors related to varicose veins	8(16%)	37 (74%)	5 (10%)	0	9(18%)	41(82%)
Knowledge on management of varicose veins	14(28%)	22(44%)	14 (28%)	0	8 (16%)	42(84%)
Knowledge on prevention of varicose veins	20(40%)	29 (58%)	1(2%)	0	13(26%)	37(74%)

The above table shows that frequency and percentage distribution of security guards according to their level of knowledge regarding prevention and management of varicose veins. In pretest, 8 (16%) of security guards had inadequate knowledge on factors related to varicose veins and 37 (74%) of security guards had moderately adequate knowledge and 5 (10%) had adequate knowledge. Inadequate knowledge was mainly in the aspects of common site of occurrence of varicose veins and complications of varicose veins.

Regarding knowledge of management of varicose veins, 14 (28%) of security guards had inadequate knowledge, 22 (44%) of security guards had moderately adequate knowledge and 14 (28%) of security guards had adequate knowledge. They had better knowledge about indications and contra indications of compression stockings and sclerotherapy.

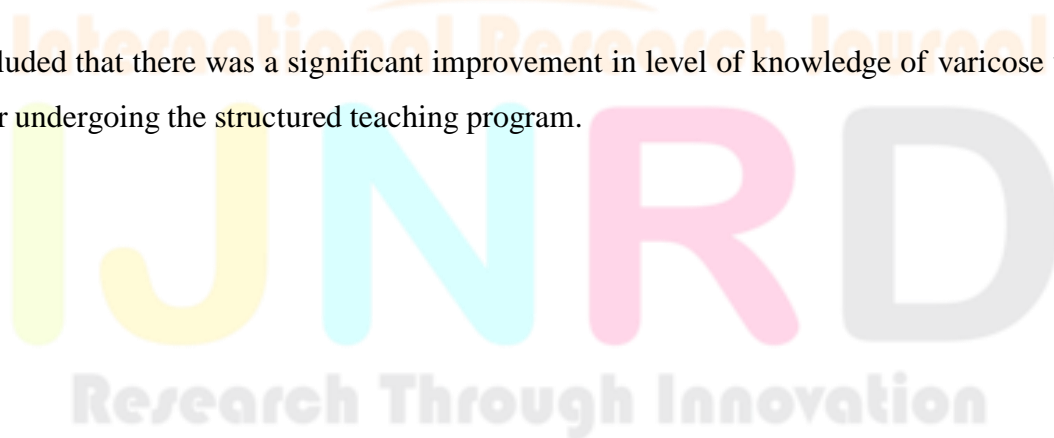
About the knowledge on prevention of varicose veins, the pre test reveals that 20 (40%) of security guards had inadequate knowledge, 29 (58%) of security guards had moderately adequate knowledge and only 1(2%) security guard had adequate knowledge. Majority of security guards had an idea of activities which reduces pressure in lower limbs and the exercises used to prevent varicose veins.

Whereas in post test 9 (18%) of nurses had moderately adequate knowledge on factors related to varicose veins and 41 (82%) of security guards had adequate knowledge. Moderately adequate knowledge was mainly in the aspect of causes and complications of varicose veins.

Regarding knowledge on management of varicose veins 8(16%) of nurses had moderately adequate and 42 (84%) of security guards had adequate knowledge. Moderately adequate knowledge was mainly in the aspect of action of diosmin used to treat varicose veins, Longevity to wear compression stockings and application of elastic bandage to maintain pressure after sclera therapy.

Posttest reveals that about the knowledge on prevention of varicose veins 13(26%) of security guards had moderately adequate knowledge and 37 (74%) of security guards had adequate knowledge. Moderately adequate knowledge was mainly in the aspect of leg elevation during sleep to prevent varicose veins and exercise helps in varicose veins.

Hence it is concluded that there was a significant improvement in level of knowledge of varicose veins among respondents after undergoing the structured teaching program.



Section B: Effectiveness of structured teaching program**Table 5.5: Mean, standard deviation scores of security guards on prevention and management of varicose veins.**

n= 50

Aspects	Max. Score	Pre-test			Post-test			Difference in mean percentage
		Mean	SD	Mean (%)	Mean	SD	Mean (%)	
Knowledge of factors related to varicose veins	11	6.50	1.74	59.1%	10.22	1.23	92.9%	33.8%
Knowledge on management of varicose veins	13	6.48	2.53	49.8%	11.32	1.83	87%	37.2%
Knowledge on prevention of varicose veins	06	2.50	0.97	41.6%	5.26	0.85	87.6%	46%
Overall score	30	15.48	4.05	51.6%	26.80	3.27	89.3%	37.7%

Aspects wise pre-test and post-test knowledge scores of the security guards on prevention and management of varicose veins tabulated above, shows that out of 30 (maximum obtainable score), the mean score was 15.48 ± 4.05 which is around 51.6.8% of the total score, implying a moderately adequate knowledge for the security guards in pre-test whereas the post-test results show a mean score of 26.80 ± 3.27 which is around 89.3 % of the total score. The overall difference in mean percentage is 37.7 %, which is a significant improvement.

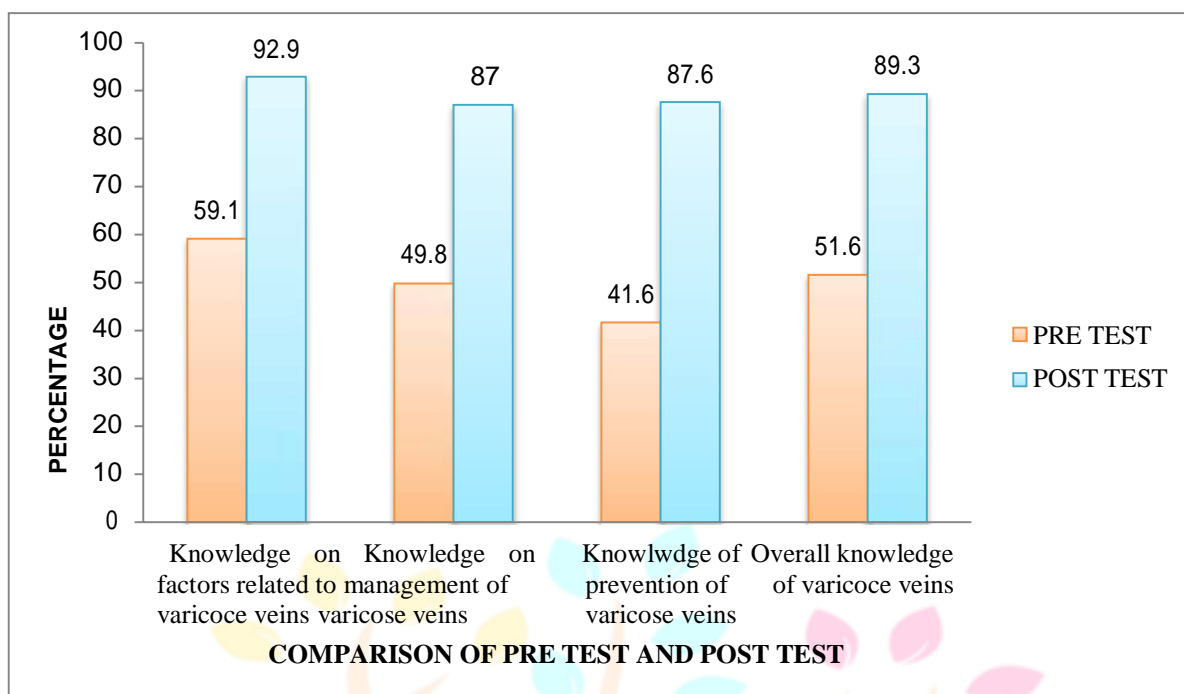


Figure 5.12: Comparison of pre test and post test knowledge score of securityguards on prevention and management of varicose veins.

Table 5.6 Aspect wise effectiveness of the structured teaching program on nurses regarding prevention and management of varicose veins.

n = 50

SECTION	MAX SCORE	Pre test	Post test	't' Value (Calculated Value)	't value' (Tabulated Value)
		Mean \pm SD	Mean \pm SD		
Knowledge on factors related to varicose veins	11	6.50 \pm 1.74	10.32 \pm 1.10	16.62*	1.676
Knowledge on management of varicose veins	13	6.48 \pm 2.53	11.62 \pm 1.51	20.36*	
Knowledge on prevention of varicose veins	06	2.50 \pm 0.97	5.28 \pm 0.83	17.39*	

Note: Statistically significant- * $p < 0.05$, S- significant

The table 5.6 shows the mean, standard deviation and paired 't' value of knowledge, management and prevention of varicose veins. The post-test mean values were higher than the pre-test mean value. The obtained paired 't' values are higher than the tabulated value ('t' value – 1.67, $P < 0.05$) was highly significant. The mean value of

post-test scores was higher than the mean value of pre-test scores.

H₁: There will be a significant difference on mean post test and mean pre test level of knowledge on prevention and management of varicose veins, among security guards. So the hypothesis was accepted.

It is inferred that the security guards had gained adequate knowledge regarding prevention and management of varicose veins after undergoing structured teaching program.

Table 5.7: Effectiveness of the structured teaching program of security guards on prevention and management of varicose veins.

Variables		Mean \pm SD of knowledge score	“t” value		P value
			Calculated value	Tabulated value	
Knowledge on prevention and management of varicose veins	Pre test	15.48 \pm 4.05	29.25*	1.676	0.00001
	Post test	26.80 \pm 3.27			

Note: Statistically significant- *p< 0.05, S- significant

The effectiveness of the structured teaching program on prevention and management of varicose veins was measured using paired “t” test. The calculated value for pre and post-test knowledge is 29.25 and the tabulated value is 1.676 at the level of (p<0.05), this shows that there is a significant improvement in the knowledge of the nurses after the implementation of structured teaching program.

Section C: Association between pre test knowledge score and their selected demographic variables

Table 5.8 Association between pre-test knowledge of security guards regarding prevention and management of varicose veins and their selected demographic variables.

Demographic Variables	Level of Knowledge		Degree of freedom	Chi-square value		P value
	Inadequate Knowledge (%)	Moderate Knowledge (%)		Calculated value	Tabulated value	
n= 50						
Age in years						
21-30 years	10 (20%)	12 (24%)	2	10.008*	5.991	.007
31- 40 years	2(4%)	23 (46%)				
41-50 years	-	3 (6%)				
Marital status						
Un Married	1(2%)	5(10%)	1	0.201	3.841	.654
Married	11(22%)	33(66%)				
Professional education						
High school	6 (12%)	36 (72%)	1	5.091*	3.841	.024
Intermediate	6 (12%)	8 (16%)				
Years of experience						
0-2 years	10 (20%)	09 (18%)	2	13.848*	5.991	.001
2-4 years	02 (4%)	26 (52%)				
4-6 years	-	03 (6%)				
Family history of varicose veins						
Yes	03(6%)	07 (14%)	1	0.247	3.841	.619
No	09 (18%)	31(62%)				
History of varicose veins						
Yes	-	02(4%)	1	0.658	3.841	.417
No	12 (24%)	36 (72%)				

Note: Statistically significant- * $p < 0.05$, NS- Not significant, S- Significant

H₂: There will be a significant association between the knowledge on prevention and management of varicose veins and their selected demographic variables of the respondents.

It is observed from table 5.8 that the chi square value was lesser than table value for marital status, family history of varicose veins, history of varicose veins and pre test knowledge score of nurses regarding prevention and management of varicose veins and not significant ($p > 0.05$). So, the hypothesis was rejected and the alternative hypothesis was accepted,

The chi square value was higher than table value for age, professional education, and year of experience and pretest knowledge score of security guards regarding prevention and management of varicose veins and was significant ($p < 0.05$). Hence the hypothesis was accepted.

It is concluded that in the pre-test the respondents' knowledge of security guards regarding prevention and management of varicose veins was not significant for marital status, family history of varicose veins and history of varicose veins and significant with age, professional education and year of experience.

CHAPTER VIDISCUSSION

This chapter presents a detailed discussion on the major objectives, corresponding findings and observations during the conduct of the study. These findings are also compared with the findings and observations of similar studies.

Demographic status of the security guards: The age of the security guards ranged from a minimum of 21 years to a maximum of over 50 years. A majority of 25 (50 %) securityguards who had participated in the study were in the age group between (31-40 years). A majority of 42 (84%) security guards who had participated in the study were male. The educational status of these security guards were high school, intermediate and among these, 36 security guards (72 %) had education in high school. The years of experience range from less than 2 years to 6 years, the majority in this case were 28 security guards (56 %) with less 2 to 4 years of experience. 10 (20%) of the security guards were the family history of varicose veins. In this majority of security guards 43 (86%) are working shift duty without rest hours and 7 (14%) security guards are working routine duty with rest hours and among 50 security guards (8) 16 % security guards only doing regular exercise (32) 44 % have normal weight and (3) 6 % have over weight and only (15) 30% have under weight. Among 50 security guards 2(4%) of security guards only having varicose veins and they had pain and itching and wearing stockings.

These findings similar to another study except professional education demonstrated that among 100 security guards surveyed to assess the knowledge regarding risk factors and preventive measures of varicose veins, Among 100 security guards, majority (64%) belong to the age group of 35 years, maximum number of subject were male gender (76%), Majority of subjects were married (63%), most subjects belonged to intermediate category (56%), About 49% were having 1-5 years of experience (Venisha Pearl Tauro et al, (2015).

The another study supported this study, the occupational risk factors responsible for lower limb varicose veins among security guards were longer work history (40.42% P- 0.001) longer working hours (>8 hrs 38.70%, p- <0.001) and prolonged orthostatic (standing longer –57.14%) beside entrance gate. They are older in age (28.30%, p- 0.001) and also having a family history of varicose veins (38.70%, p- 0.006).

In security guards older age, family history, longer work history, longer working hours and prolonged standing beside entrance gate are major risk factors for developing lower limb varicose vein (**Neeta Mishra, 2015**).

Frequency and percentage distribution of security guards according to their level of knowledge on prevention and management of varicose veins.

The result of this study showed an increase in level of knowledge of the security guards in post test scores. Forty-four (88%) had adequate knowledge and 6 (12%) had moderately adequate knowledge after implementation of structured teaching program on prevention and management of varicose veins. These findings are similar to a study adopted one group pre test post test design that the self instructional module on prevention of varicose veins among traffic police personnel at Mangalore was very effective by using paired 't' test ('t' = 24.93, p <0.0001) in increasing the knowledge of traffic police personnel on prevention of varicose veins (**Kapil Sharma, 2013**).

Aspect wise pre and post-test knowledge of security guards on prevention and management of varicose veins.

From this study, it shows that there was an increase in the level of knowledge of the security guards during post-test, producing a mean score of 26.80 ± 3.27 which is around 89.3 % of adequate knowledge which was achieved after the implementation of structured teaching program. The study is supported by a relative study conducted by **Venisha Pearl Tauro in 2015** which shows that the knowledge on prevention and management of varicose veins among security guards shows improvement in post test. Among 100 samples majority of the subjects (61%) were having good knowledge regarding varicose vein, followed by 26% having average knowledge, and 10% were having very good knowledge. The mean percentage of overall level of knowledge was 59.64%.

The effectiveness of structured teaching program on security guards regarding prevention and management of varicose veins.

In this study, the finding shows that there is an increase in the knowledge of the security guards after being exposed to the structured teaching program. The results show that there was a significant improvement in the post-test knowledge of the security guards. Hence H1 was statistically proved and accepted, showing that the structured teaching program regarding prevention and management of varicose veins.

Association between pre-test knowledge of security guards about prevention and management of varicose veins and their selected demographic variables.

In this study, an association was found between pretest knowledge scores and selected demographic variables like age in years, professional education, and years of experience respectively by using chi-square (χ^2). There was significant association between age, professional education and years of experience and pretest knowledge scores of security guards and not significantly among marital status, family history of varicose veins and history of varicose veins.

A similar study done regarding knowledge of security regarding varicose veins shows that the association between the level of knowledge and selected demographic variables exposed that there was significant association between the level of knowledge and marital status, academic qualification, years of experience in the present ward and Source of Knowledge. It was also evident from the study that there was no significant association between the level of knowledge with other demographic variables like age, gender, professional experience and previous information regarding varicose veins (**Venisha Pearl Tauro et al, (2015)**).

CHAPTER VII CONCLUSION

This study was conducted to assess the effectiveness of structured teaching program for security guards administering intravenous administration of chemotherapy. Relevant literatures were reviewed to enrich the knowledge on the selected specialization that is the intervention structured teaching, selecting an appropriate conceptual model, developing a frame work and research plan.

The research design adopted for this study was pre and post-test design, it is a type of quasi experimental design. The study was conducted in security recruitment agency, Kanpur. Using purposive sampling technique, 50 security guards working in critical care unit were selected for this study.

Validity and reliability of the tool was tested through pilot study. According to the selection criteria, the security guards were selected for the study. A self administered questionnaire was used to assess the knowledge level of security guards. The data was collected after ethical approval, from 06.3.2021 to 15.4.2021. The pre-test level of knowledge was assessed and structured teaching was provided for the security guards for about 45 minutes. Post test was conducted after 7 days. Both the descriptive and inferential statistics were used to analyze the data. Paired “t” was used to evaluate the effectiveness of structured teaching program on prevention and management of varicose veins. Chi-square was used to find the association between pre-test evaluations of security guards regarding prevention and management of varicose veins and their selected demographic variables.

Major findings of the study

- Less than half of the security guards 44% (22) were the age group of 21 to 30 years.
- Eighty four percentage (44) security guards were married.
- Majority of the security guards 72% (36) had high school qualification.
- More than half of the security guards 56% (23) had two to four years of experience.
- Twenty Percentage of the security guards had the family history of varicose veins.
- Majority of the security guards 84% (42) were not doing regular exercise.
- More than half of the security guards 64% (32) had normal body mass index.
- Majority of the security guards 76% (38) had moderately adequate knowledge and 24% (12) had inadequate knowledge. After the structured teaching program, knowledge level was improved in which most of the security guards, 88% (44) had adequate knowledge and 12% (6) had moderately adequate knowledge.
- There was an association ($\chi^2=10.008$, $p<0.05$,) between pre test knowledge of security guards and their age and years of experience.
- There was an association ($\chi^2= 5.091$, $p<0.05$,) between pre test knowledge of security guards and their professional education.
- There was no association ($\chi^2 = 0.247$, $p<0.05$,) between pre test knowledge of security guards and their marital status, family history of varicose veins and history of varicose veins.

Conclusion:

This chapter dealt with the conclusion of the followed by its Structured teaching program was helpful in improving knowledge among security guards regarding prevention and management of varicose veins.

CHAPTER-VIII

SUMMARY

The primary responsibility of a healthcare professional is to create awareness and to provide necessary information through continuous education which will help in developing a positive attitude. In this study, majority of the security guards had moderately adequate knowledge after the structured teaching more than half of the security guards gained adequate knowledge. The study found that structured teaching program on prevention and management of varicose veins has helped to develop additional knowledge about the same. Hence, structured teaching helps the security guards to be aware of the prevention and management of varicose veins, so they may protect themselves as well as the patients.

The study finding revealed an increase in the knowledge level following the structured teaching program. In this study, the statistical analysis showed that there was a significant improvement ($t = 29.25$, $p < 0.05$), in the level of knowledge after implementation of structured teaching program and significant association

($\chi^2 = 5.091$, $p < 0.05$) between pretest score of knowledge on prevention and management of varicose veins with age, professional education and years of experience.

Nursing implications: Nursing education

- Special training programs need to be incorporated in both undergraduate and graduate programs.
- Educating the security guards regarding prevention and management of varicose veins and life style modification.
- Continuous education among the security guards will help to promote and update their knowledge on prevention and management of varicose veins.

Nursing practice

- Since the present study would enable the security guards to become aware about prevention and management of varicose veins. Protocol can be issued to respective security recruitment agency which will help to reinforce these security guards regarding prevention of varicose veins.
- Suggest for foot stool when security guards leave have stand and work. e.g.: Documentation.
- Recommended the security guards to be seated while in regular interval.
- Advised to do mild exercise and walking to prevent varicose veins.
- To elevate the legs while sleeping.

Nursing administration

- Periodical arrangement of in-service education, continuing education and training programs for security guards.
- Protocols should be made in security recruitment agency regarding the prevention and management of varicose veins.

Nursing research

- Studies can be conducted regarding knowledge on life style practices to prevent varicose veins.
- The findings of the study can be utilized for conducting research using large sample.
- The research can be utilized for conducting research on different specialized departments in the hospital setting.

Limitations

- This study was conducted only in a selected ward which imposed limitations in generalization of findings.
- It is difficult to gather all the security guards at the same time to conduct for structured teaching program.
- This study did not explore the practices after imparting knowledge on prevention and management of varicose veins.

Recommendations for further study

On the basis of the study the following recommendations were made.

- A similar study can be replicated on a larger sample size to generalize the findings.
- A study can be conducted by using other strategies like booklets, pamphlets, flashcards etc.
- A comparative study can be undertaken with the control group and the experimental group.
- An observational study can be done on practice of security guards regarding the prevention and management of varicose veins.

Summary:

This chapter dealt with the summary of the followed by its implications in nursing, nursing practice and nursing research. This chapter also spreads light on the limitations and recommendations.

CHAPTER-IX

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TOOL FOR DATA COLLECTION

Section A

Demographic Data

1. Sample No : _____
2. Age in years : a.21-30 years, b.31-40 years, c.41-50 years
3. Gender : Male / Female
4. Marital status : Unmarried / Married
5. Education status : High school / Intermediate
6. Years of experience :YearsMonths
7. Years of working in security recruitment agency :Years Months.
8. Duration of duty hours per day.....Hours
9. Family history of varicose veins: Yes / No
10. Doing Regular exercises : Yes / No
 If Yes, Specify a. Time duration
 b. Type of exercise.....
11. a. Height: b. Weight:
12. BMI :
13. History of varicose veins: Yes /No
 If Yes: a. Symptoms present
 b. Preventive Measures for varicose veins.....

Section: B

Self administered questionnaire to assess the knowledge on prevention and management of varicose veins.

Questions related to

Part A: Knowledge on Varicose veins (Q. No 01 to 11)

Part B: Management of Varicose veins (Q. No 12 to

24) **Part C:** Prevention of Varicose veins (Q. No 25 to 30)

Instruction for participants:

Read the above instruction carefully and answer the questions.

- ❖ Totally there are 30 questions and each question carries one mark.
- ❖ Each question consists of four options. The participants are requested to circle only one answer on the respective bracket. More than one answer is considered as invalid.
- ❖ The details will be kept confidentially.

Part A: Knowledge of factors related to Varicose Veins

1. **Varicose veins are referred as**
 - a. Acute Arterial insufficiency
 - b. Acute Venous insufficiency
 - c. Chronic Arterial insufficiency
 - d. Chronic Venous insufficiency
2. **The cause of varicose veins is**
 - a. Injury in the intimal layer of veins
 - b. Incompetent vein valves
 - c. Occlusion by atherosclerotic plaque in the veins
 - d. Vasospasm of the veins
3. **The common site of occurrence of varicose veins is**
 - a. Femoral vein
 - b. Popliteal vein
 - c. Cephalic vein
 - d. Greater and lesser saphenous vein
4. **Primary varicose veins are**
 - a. Involved in deep veins only
 - b. Involved in superficial veins only
 - c. Involved in superficial and deep veins
 - d. Involved in perforator veins only

- 5. The most common cause of varicose vein is**
 - a. Vigorous exercises
 - b. Low fluid intake
 - c. Prolonged standing
 - d. Inadequate sleep
- 6. Associated risk factor of varicose veins in female is**
 - a. Pregnancy
 - b. Short stature
 - c. Poor Nutrition
 - d. Heavy work
- 7. One of the following is not considered a symptom of varicose veins**
 - a. Leg cramps
 - b. Itching
 - c. Feeling of heaviness
 - d. Cold legs or feet
- 8. The skin colour changes of varicose veins is called**
 - a. Cutis marmorata
 - b. Hypopigmentation
 - c. Hyperpigmentation
 - d. Stasis Pigmentation
- 9. Varicose veins are commonly diagnosed by**
 - a. Angiogram
 - b. MRI Scan
 - c. Duplex ultrasound
 - d. CT Scan
- 10. Telangiectasia is**
 - aa. Ruptured vein
 - b. Spider vein
 - c. Compressed vein
 - d. Reticular vein
- 11. The potential complication of spider vein is**
 - a. Rupture of spider vein
 - b. Paresthesia
 - c. Phlebitis

d.Swelling of limb

Part B: Management of varicose veins

12. The test commonly used to determine varicose veins is

- a. Fegan's test
- b. Trendelenbrug test
- c. Perthe's test
- d. Multiple tourniquet test

13. The action of diosmin used to treat varicose veins is

- a. Vasoconstrictor
- b. Analgesics
- c. Vasodilator
- d. Antibiotic

14. Compression stockings are used to

- a. Reduces pain
- b. Inhibits blood flow
- c. Promotes venous return
- d. Increase venous stasis

15. When should you wear compression stockings?

- a. As soon as you get up in the morning
- b. After your break fast
- c. Before going to travel
- d. Whenever you feel pain and discomfort

16. Ideal pressure of the compression stocking to manage varicose vein would be

- a.8 to 10 mmHg at the ankle
- b.10 to 20 mmHg at the ankle
- c.20 to 30 mmHg at the ankle
- d. 30 to 40 mmHg at the ankle

17. The reasons an individual should not wear compression stocking is

- a. Arterial occlusive disease
- b. Healed Venous Ulcers
- c. Lymphedema
- d. Post thrombotic syndrome

18. Compression stockings to be removed to prevent complications once in

- a. Every hour
- b. Every fourth hours
- c. Every eight hours
- d. Every twelfth hours

19. How long to wear compression stockings for varicose veins?

- a. Upto two years
- b. Upto one month
- c. Upto six months
- d. Upto five years

20. Unna boot is comprised of

- a. Vaseline impregnated bandage
- b. Zinc oxide compressed bandage
- c. Paraffin vax compressed bandage
- d. Magnesium sulphate compressed bandage

21. Curative management for varicose veins are

- a. Ligation & Stripping
- b. Sclerotherapy
- c. Laser Surgeries
- d. Pheripheral vascular bypass surgery

22. An important measure after an varicose vein surgery is

- a. Adequate fluid intake
- b. Elevate the legs
- c. Dressing
- d. Not elevate the legs

23. Sclerotherapy involves

- a. Cutting & anastamosis of vein
- b. Injecting medicines into the vein
- c. Harvesting the vein
- d. Stenting of the vein

24. After sclerotherapy elastic bandage applied to maintain pressure for

- a. 4 to 8 hours
- b. 8 to 12 hours
- c. 12 to 24 hours

- d. 24 to 72 hours

Part C: Prevention of varicose veins

25. The leg elevation during sleep to prevent varicose veins is

- a. 0 to 15 degree
- b. 15 to 30 degree
- c. 30 to 45 degree
- d. 45 to 60 degree

26. Which is not considered for prevention of varicose veins is

- a.Regular exercise
- b.Leg elevation
- c.Avoidance of prolonged standing
- d.Wearing tight socks

27. The following action that cannot prevent varicose veins is

- a. Adequate rest and sleep
- b. Wearing compression stockings
- c. Intermittent sitting and standing
- d. Crossing legs while sitting

28. The activity to reduce pressure in lower limbs while working is

- a. Do not Shift your weight from one leg to other
- b. Rest your legs on a stool alternately
- c. Take adequate fluid intake
- d. Stand straight

29. Which exercises are used to prevent varicose veins

- a. Leg exercises, calf raises and walking
- b. Weight lifting
- c. Deep squats
- d. Running

30. Exercise helps in varicose veins to

- a. Reduces muscle tone
- b. Reduces pain and discomfort
- c. Improve venous return
- d. Improve venous stasis

AIM: To assess the knowledge of security guards regarding prevention and management of varicose veins.

CENTRAL OBJECTIVE:

At the completion of the video assisted teaching program the nurses will gain adequate knowledge regarding prevention and management of varicose veins.

SPECIFIC OBJECTIVES:

At the completion of the teaching the security guards will be able to

- define varicose veins
- list down the causes of varicose veins
- identify the risk factors of varicose veins
- explain the pathophysiology of varicose veins
- enlist the types of varicose veins
- discuss about the clinical manifestations of varicose veins
- describe the diagnostic evaluation of varicose veins
- define telangiectasia and its features.
- appreciate the management of varicose veins
- enumerate the complications of varicose veins
- discuss about the preventive measures of varicose veins
- demonstrate about exercises used to prevent varicose veins.



S. No	Specific objective	Content	Time	AV Aids	Teachers Activity	Nurses Activity	Evaluation
1		<p>INTRODUCTION:</p> <p>Varicose vein commonly occurs in the general population. The physical conditions during the work and conditions of employment are important risk factors that induced prevalence varicose veins are increased.</p>	2 mts	ppt	Introducing the topic	Listening	
2	The nurses will be able to define varicose veins	<p>DEFINITION:</p> <p>Varicose veins can be defined as abnormally dilated tortuous superficial veins caused by incompetent valve closure which results in venous congestion and vein enlargement.</p>	2 mts	video teaching	Defines and explains	Listening	What is tortuous?
3	The nurses will be able to list down the causes of varicose veins	<p>ETIOLOGY:</p> <ul style="list-style-type: none"> • Idiopathic • Prolonged standing or sitting • Congenital weakness of the vein structure • Female gender • Pregnancy • Obesity • Incompetent venous valves • Increasing age • Infections and trauma 	3 mts	video teaching	Explaining	Listening and asking doubts	Why female genders get varicose veins?

4	The nurses will be able to identify the risk factors of varicose veins	RISK FACTORS: <ul style="list-style-type: none"> • Age • Female Gender • Family history • Obesity • Pregnancy • Prolonged Standing or sitting 	2 mts	video teaching	Explaining	Listening	How pregnancy cause varicose veins
5	The nurses will be able to explain about the pathophysiology of varicose veins	PATHOPHYSIOLOGY: Due to the etiological factors Venous thrombosis Vein enlarges due to obstruction Valves become stretched and competent Reversal of venous blood flow Back pressure increases failure of calf muscle pumping ↓ Further venous distension Increased venous pressure is transmitted to the capillary bed ↓ The veins become edematous, tortuous and dilated.	5 mts	ppt cum video teaching	Explaining	Listening	What is thrombosis ?

6	The nurses will be able to enlist the types of varicose veins	TYPES OF VARICOSE VEINS: <ul style="list-style-type: none"> • Primary varicose veins • Esophageal varices • Secondary varicose veins • Hemorrhoids 	2 mts	ppt	Explaining	Listening	What is varices?
7	The nurses will be able to discuss about the clinical manifestations of varicose veins	CLINICAL MANIFESTATIONS: <ul style="list-style-type: none"> • Enlarged veins • Painful, achy or heavy legs. • Throbbing or cramping in legs. • Itchy legs especially in the lower leg and ankle • Discoloration of skin (Hyper pigmentation) • Muscle cramps, muscle fatigue. • Ankle edema • Nocturnal cramps • Venous stasis 	3 mts	video teaching	Explaining	Listening and asking doubts	Why itching occur in varicose veins?
8	The nurses will be able to describe the diagnostic evaluation of varicose veins	DIAGNOSTIC STUDIES: <ul style="list-style-type: none"> • History collection • Physical examination • Duplex Ultrasound Scan 	2 mts	ppt	Explaining	Listening	How to do trendelenburg Test?

		<ul style="list-style-type: none"> ➤ <u>Trendelenburg test I</u> <ul style="list-style-type: none"> • Ask the patient to lie down, • Empty the veins by elevating the limbs, • Apply pressure at the SFJ-Using a finger/ tourniquet, • Ask the patient to stand up, • Suddenly release the pressure. • Rapid filling from above indicates SFJ incompetence. ➤ <u>TrendelenbergTest 2</u> <ul style="list-style-type: none"> • Ask the patient to lie down, Empty the veins by elevating the limbs. • Apply pressure at the SFJ-Using a finger/tourniquet, ask the patient to standup, maintain the pressure for 1 minute. • Filling of veins from below indicates Perforator Incompetence. 				
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		<p>➤ <u>Fegan's test</u></p> <ul style="list-style-type: none"> • In standing posture the places of excessive bulges within the varicosities are marked. • Make the patient lie down. Elevate the limb to empty the veins. • Palpate along the line of marked bulges to find out the pits/defects in the deep fascia which transmits the incompetent perforators. <p>➤ <u>Perthe's test</u></p> <ul style="list-style-type: none"> • Esmarch elastic bandage is applied from toes to the groin. This causes emptying of the vein. • Apply the tourniquet at the SFJ. • Remove the elastic bandage without removing the tourniquet. • Re apply the elastic bandage from above. 					
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		<ul style="list-style-type: none"> • At the positions of perforators visible varices / Blow outs are seen. The sites are marked. ➤ <u>Multiple tourniquet test</u> • To localize the approximate site of incompetent perforator. • Ask the patient to lie down Empty the veins by elevating the limbs • Apply 3 Tourniquets One below SFJ and Mid thigh One just above the Knee joint One just below the knee joint • Ask the patient to stand up. • Inspect for 30 sec • Take the tourniquet from below upwards • Veins dilate and fill up where the perforator is incompetent. 				
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9	The nurses will be able to define telangiectasia and its features.	<p>TELANGIECTASIA:</p> <ul style="list-style-type: none"> • It also known as spider veins or angioectasias, are small dilated blood vessels near the surface of the skin or mucous membranes, measuring between 0.5 and 1 millimeter in diameter. • The Causes are aging, heredity, oral birth control pills, hormonal changes during puberty or menopause, hormone replacement therapy, pregnancy, standing or sitting for long periods of time, wearing a girdle or clothing that is too tight, obesity and sun exposure etc. • The complications are <ul style="list-style-type: none"> ➤ Skin ulcers ➤ Bleeding ➤ Phlebitis ➤ Thrombosis 	3 mts	ppt	Explaining	Listening	What is Phlebitis?
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10	The nurses will be able to appreciate the management of varicose veins	<p>MANAGEMENT:</p> <p>Pharmacological Management:</p> <ul style="list-style-type: none"> • Diosmin (oral phlebotropic drug)) • Hesperidine found in citrus fruits (such as oranges, lemons) • Anti-inflammatory medication such as ibuprofen or aspirin for superficial thrombophlebitis • Analgesics <p>Conservative Management:</p> <ul style="list-style-type: none"> • Elevation of the legs. • Avoid prolonged sitting and standing. • Compression stockings. • Exercise • Lose weight • Unna boot 	5 mts	ppt	Explaining	Listening	What is thrombophlebitis?
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11	The nurses will be able to discuss about compression stockings.	<p>Compression Stockings:</p> <ul style="list-style-type: none"> • Compression stockings are made of a special elastic fabric. • They are very tight at the ankle and are less tight as the stocking moves up the leg. • This graduated tightness helps the leg muscles squeeze fluid up the leg, which improves blood flow from the leg back to the heart and decreases leg swelling and pain. • The most common recommended pressure is 30 to 40 mmHg pressure. • Put your stocking on first thing in the morning, before you are up on your feet. • Remove stockings at bedtime and every fourth hours to prevent complications. • Compression stockings should be worn for 2 years. 	3 mts	ppt	Explaining and discussing	Listening and asking doubts	How long to wear compression stockings?
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		<ul style="list-style-type: none"> The contraindications of compression stockings are peripheral obstructive arterial disease, heart failure, septic phlebitis, oozing dermatitis and advanced peripheral neuropathy. 					
12	The nurses will be able to discuss about the surgical management of varicose veins	<p>Surgical Management:</p> <ul style="list-style-type: none"> Sclerotherapy Vein Stripping and Ligation Laser Treatment Endovenous ablation therapy Cryosurgery <p>Sclero therapy:</p> <p>Sodium tetradecyl sulphate 0.25 - 1ml at one site and maximum can be 4 ml at 4 different sites in superficial vein.</p> <p>Vein Stripping and Ligation:</p> <p>This procedure involves tying of all varicose veins associated with the leg's main superficial vein and removing it from the leg.</p>	3 mts	ppt cum video teaching	Explaining	Listening	What is Vein stripping?

		<p>Laser Treatment:</p> <p>This procedure uses no incisions or injections. Light energy from a laser is used to make the vein fade away.</p> <p>Endovenous ablation therapy:</p> <p>A tiny incision is made in the skin & small catheter is inserted into the vein. A device at the tip of the catheter heats up inside the vein, which causes it to close off.</p> <p>Cryosurgery:</p> <p>A cryo probe is passed down the long saphenous vein following sapheno femoral ligation. Then the probe is cooled with NO₂ or CO₂ to a temperature of -85°.</p> <p>The vein freezes to the probe and can be retrograde stripped after 5 second of freezing. It is a variant of Stripping.</p>					
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13	The nurses will be able to enumerate the complications of varicose veins	COMPLICATIONS: <ul style="list-style-type: none"> • Eczema & Dermatitis • Lipodermatosclerosis • Haemorrhage • Thrombophlebitis • Venous Ulcer • Calcification • Periostitis • Marjolin's ulcer 	2 mts	ppt	Explaining	Listening	What is Lipodermat osclerosis ?
14	The nurses will be able to discuss about the preventive measures of varicose veins.	PREVENTION OF VARICOSE VEINS: <ul style="list-style-type: none"> • Avoid prolonged standing. • Avoid wearing tight clothing such as girdles or belts. • Do not cross the legs when sitting. • Walking is good exercise. • Encourage her to maintain a normal body weight. • To elevate her legs periodically throughout the day. • Eat a healthy diet high in fiber 	3mts	ppt	Explaining	Listening	How much leg elevation during sleep to prevent varicose veins ?

		<p>and low in salt.</p> <ul style="list-style-type: none"> • Avoid wearing high heels. • To elevate the legs 15 to 30 degree while sleeping. 					
15	The nurses will be able to demonstrate about exercises used to prevent varicose veins.	<p>EXERCISES FOR VARICOSE VEINS:</p> <ul style="list-style-type: none"> • Walking- The single best exercise for your lower extremity circulation. • Leg Lifts – Sit on the floor or lie on your back with your feet straight out. Slowly, lift one leg at a time from the floor. Hold your leg in the air, letting the blood run down and back up your leg. Slowly, lower your leg back down to the floor. Repeat on the opposite leg. • Calf Raises – Stand with your legs straight. Slowly, rise on to your tiptoes and then lower back down. 	5 mts	Video teaching	Explaining	Listening and re demonstrate the exercises	How exercise helps to reduce varicose veins?

		<ul style="list-style-type: none">• Bicycle Legs – Lie on your back, bringing your legs in the air and bending them at the knee. Slowly, begin to pedal your legs as if you were riding a bicycle.					
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CONCLUSION:

Till now we have discussed about varicose veins definition, causes, risk factors, types, pathophysiology, clinical manifestations, diagnostic evaluation, pharmacological management, conservative management, surgical management, complications, preventive measures and exercises used to prevent varicose veins.

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ANNEXURE- VI

MASTER CODING SHEET

Demographic data												
S. No	Age	Sex	Education status	Marital status	Years of Experience	Duty Hrs	Family History of varicose veins	Doing Exercise	Ht	Wt	BMI	History Of varicose veins
1	31-40	F	HS	M	2.6	8	N	N	178	78	24.6	N
2	31-40	M	IM	UM	2	8	Y	Y	151	51	22.4	N
3	31-40	M	HS	M	1.6	8	N	N	162	53	20.02	N
4	31-40	M	HS	UM	4	8	Y	N	156	44	18.08	N
5	31-40	M	HS	M	2.5	8	N	N	162	56	21.34	N
6	21-30	M	HS	M	2.6	8	N	N	156	49	20.1	N
7	31-40	M	HS	M	2.6	8	N	N	155	38	15.8	N
8	21-30	M	IM	M	1.6	8	N	N	153	58	24.8	N
9	41-50	M	HS	UM	6.3	8	N	N	162	65	24.8	N
10	41-50	F	IM	UM	5.6	8	N	N	156	52	21.4	N
11	31-40	F	HS	M	3.1	8	N	N	168	74	26.2	N
12	31-40	M	IM	M	3.6	8	N	N	158	40	16	N
13	31-40	F	HS	M	3.6	8	N	Y	180	78	24.1	N
14	31-40	M	HS	M	3.6	8	N	N	140	38	19.4	N
15	31-40	M	IM	M	2.6	8	Y	N	155	34	14.2	N
16	21-30	M	IM	M	2.7	8	N	N	150	38	16.9	N
17	31-40	M	HS	M	2.6	8	Y	Y	155	40	16.6	N
18	31-40	M	HS	M	2.1	8	N	N	154	40	16.9	N
19	31-40	M	HS	M	2.6	8	N	N	171	49	16.8	N
20	31-40	M	HS	M	2.3	8	N	N	154	58	24.5	N
21	31-40	F	HS	M	2.6	8	N	Y	178	78	24.6	N
22	21-30	M	HS	M	2.6	8	Y	N	160	58	22.7	N
23	31-40	M	IM	M	1.6	8	N	N	154	50	21.1	N
24	31-40	M	IM	M	2.6	8	N	N	152	55	23.8	N
25	21-30	M	HS	M	1.6	8	N	N	154	48	20.2	N
26	21-30	M	HS	M	1.6	8	Y	N	165	59	21.7	N
27	21-30	M	HS	M	2.6	8	N	Y	151	36	15.8	N
28	21-30	M	HS	M	1.3	8	N	N	151	48	21.1	N
29	21-30	M	IM	M	2.6	8	N	N	158	48	19.2	N
30	31-40	M	HS	M	3.3	8	N	N	163	45	16.9	N
31	21-30	M	IM	M	1.9	8	N	N	156	45	18.5	N
32	21-30	M	HS	M	1.3	8	N	N	153	49	20.9	N
33	21-30	M	HS	M	1.4	8	N	N	145	40	19	N
34	21-30	M	HS	M	2.3	8	N	N	152	43	18.6	N
35	21-30	M	HS	M	1.8	8	N	N	161	56	21.6	N
36	21-30	M	HS	M	1.3	8	N	N	156	48	19.7	N
37	21-30	M	HS	M	1.4	8	Y	N	163	45	16.9	N
38	21-30	M	HS	M	0.5	8	N	N	158	51	20.4	N
39	21-30	M	HS	M	1.6	8	Y	N	159	48	19	N
40	21-30	M	HS	M	0.4	8	N	N	151	49	21.5	N
41	21-30	M	IM	M	1.6	8	N	N	153	50	21.4	N
42	21-30	M	HS	M	0.4	8	N	N	157	44	17.9	N
43	31-40	F	IM	M	2.6	8	N	N	181	50	15.3	N
44	31-40	M	IM	M	3.1	8	N	N	156	56	23	N
45	31-40	M	HS	M	1.6	8	Y	N	155	45	18.7	N
46	31-40	M	HS	M	3.6	8	N	N	150	51	22.7	N
47	31-40	F	HS	M	2.6	8	N	Y	176	80	25.8	N
48	41-50	F	HS	M	3.6	8	N	Y	172	80	27	N
49	31-40	M	HS	UM	2	8	N	Y	150	51	22.7	Y
50	21-30	M	HS	M	1.3	8	Y	N	155	60	25	Y

Research Through Innovation

Pre Test Knowledge Score					Post Test Knowledge Score				
S.NO	K	M	P	TOTAL	S.NO	K	M	P	TOTAL
1	8	9	3	20	1	11	13	6	30
2	3	4	3	10	2	8	9	4	21
3	9	6	3	18	3	10	11	4	25
4	6	6	4	16	4	11	9	5	25
5	6	7	6	19	5	10	11	5	26
6	7	7	3	17	6	10	10	5	25
7	7	6	4	17	7	10	12	6	28
8	4	4	2	10	8	10	11	4	25
9	8	8	4	20	9	11	13	6	30
10	8	10	2	20	10	11	13	6	30
11	8	9	2	19	11	11	13	4	28
12	5	9	3	17	12	8	12	6	26
13	9	9	2	20	13	11	13	6	30
14	8	9	2	19	14	11	13	6	30
15	8	8	3	19	15	11	13	6	30
16	5	8	4	17	16	8	12	6	26
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18	7	10	2	19	18	11	13	5	29
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23	5	3	2	10	23	10	11	5	26
24	8	9	2	19	24	11	12	4	27
25	8	5	1	14	25	11	11	6	28
26	6	6	2	14	26	8	10	6	24
27	6	3	1	10	27	11	9	6	26
28	6	7	3	16	28	11	13	6	30
29	6	6	2	14	29	11	11	4	26
30	7	9	4	20	30	11	13	6	30
31	3	4	2	9	31	11	13	4	28
32	4	1	3	8	32	8	9	5	22
33	2	3	3	8	33	10	11	5	26
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35	8	4	3	15	35	10	9	6	25
36	7	8	2	17	36	11	13	6	30
37	4	4	2	10	37	11	12	4	27
38	7	1	1	9	38	8	12	4	24
39	6	7	1	14	39	10	11	5	26
40	4	2	2	8	40	8	9	4	21
41	6	2	1	9	41	8	9	5	22
42	4	4	2	10	42	11	12	6	29
43	7	7	2	16	43	11	11	5	27
44	6	9	2	17	44	11	13	6	30
45	8	8	3	19	45	11	13	6	30
46	8	8	2	18	46	11	13	4	28
47	6	4	2	12	47	11	9	6	26
48	9	9	2	20	48	11	13	5	29
49	7	8	4	19	49	11	13	6	30
50	5	7	3	15	50	11	12	6	29

Item Wise Analysis PreTest Score																																
S.NO/ Q.NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
1	1	1	1	0	1	0	1	1	0	1	1	0	0	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	0	
2	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	
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Item Wise Analysis Post Test Score																																
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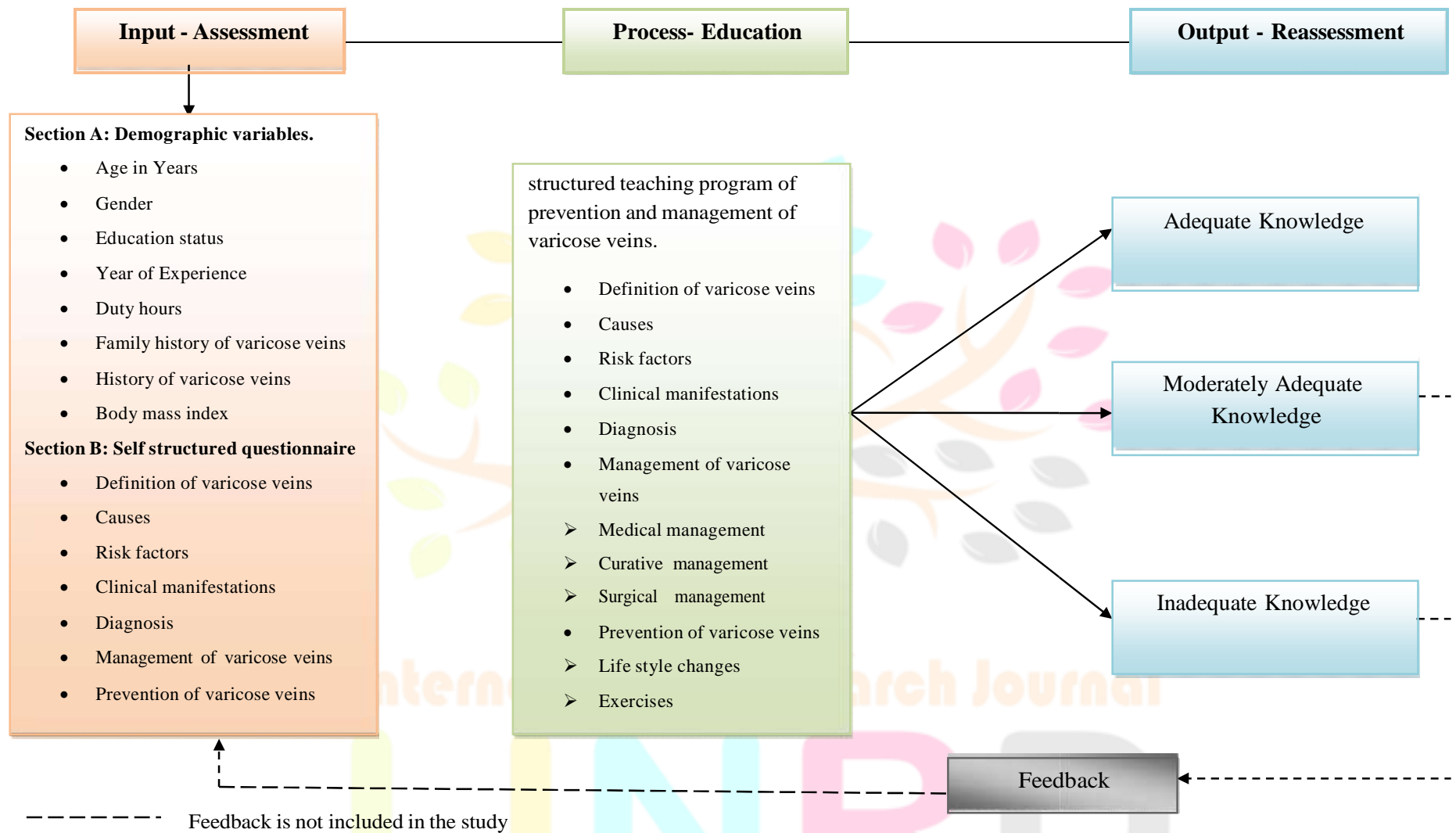


Figure No. 2.1: Based on Ludwig Von Bertalanffy (1968) modified general system model to assess the effectiveness of structured teaching program for security guards on prevention and management of varicose veins.