A Study to Assess the Prevalence, Risk Factors and Preventive Practices of Varicose Vein among the Staff Nurses Working in Selected Hospitals of Kamrup (M), Assam

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Abstract: Varicose veins have been recognized as chronic disorder since ancient times. Varicose veins are tortuous, distended and bulging veins (varicosities) beneath the skin of the legs. Nurses are at a greater risk of developing varicose vein in their lifetime which they are always neglecting. It has a great effect on the lower limbs. This descriptive study involved a total of 185 staff nurses with presence or absence of varicose vein along with possible risk factors and preventive practices adopted by them assessed in seven selected hospitals of Kamrup (M), Assam. Statement: “A Study to Assess the Prevalence, Risk Factors and Preventive Practices of Varicose Vein among the Staff Nurses Working in Selected Hospitals of Kamrup (M), Assam”. Materials and Methods: A quantitative survey approach with descriptive correlational survey design was considered to be appropriate for this study. The setting chosen was seven randomly selected hospitals of Kamrup (M), Assam and a total of 185 subjects who met the inclusion criteria were chosen by using proportionate simple random sampling technique. Data was collected using structured self-administered questionnaire and analyzed in terms of descriptive and inferential statistics using the SPSS version 21. Result: The findings of the study revealed that prevalence of varicose vein was 9.2 percent. Among the risk factors of varicose vein predominantly seen was working in prolonged standing position (79.5%) which had a positive impact on developing varicose vein. Regarding different preventive practices of varicose vein, majority of staff nurses (89.2%) were wearing flat shoes. Again according to the level of preventive practices majority of the staff nurses (60%) had moderately adequate level of practice. Other major findings were significant relationship found between prevalence of varicose vein and family history [OR= 6.65, 95% CI 2.23-19.87], history of pregnancy/delivery [OR= 4.00, 95% CI 1.35-11.89], prolonged standing [OR= 2.12, CI 95% 1.46-9.68], less physical activity[OR= 7.68, 95% CI 1.70-34.63], overweight [OR= 4.20, 95% CI 1.46-12.10] and high blood pressure [OR= 0.87, 95% CI 0.81-0.93]. However, among all the preventive practices OR showed that prevalence of varicose was 2.31 times higher in the subjects who were not maintaining BMI in normal range. Study also revealed significant association between prevalence of varicose vein and demographic variables i.e., age [χ²(2df) =32.062; P= 0.003], marital status [χ²(1df) =15.119; P=0.004], Weight (Kg) [χ²(3df) = 9.559; P= 0.023], BMI, [χ²(1df) =23.74; P=0.00014], shift duty hours per day [χ²(1df) =6.992; P=0.008] and total years of clinical experience [χ²(2df) =11.273; P=0.009]. Present study also reported significant association between preventive practices towards varicose vein among the staff nurses with marital status [χ²(2df) = 22.45; P=0.0013] and BMI [χ²(2df) =12.092; P=0.002]. Conclusion: The study findings demonstrated prevalence of varicose vein among the staff nurses was almost equal with the worldwide prevalence rate and prolonged standing position was most frequently found predominant risk factor. Most common preventive practices as observed in the study were using flat shoes, maintain normal body weight and avoid prolonged standing. However, maximum subjects adopted moderately adequate preventive practices. This study indicated that nurses can modify and improve their working condition as well as they may follow correct practices to prevent varicose vein so that they can maintain a healthy lifestyle. Therefore planned teaching programme and appropriate strategies on prevention of varicose vein are highly recommended in the setting in order to impart adequate knowledge to prevent development of varicose vein.

Keywords: Varicose Vein, Prevalence, Risk factors, Preventive Practices, Demographic Variables, Staff nurses.

I. INTRODUCTION

The term “varicose” is derived from Latin “varix” (pleural varices) meaning bent. Varicose veins are tortuous, distended and bulging veins (varicosities) beneath the skin of the legs. They are most often swollen, gnarled veins that frequently occur in the legs, ankles and feet.[1] When veins become varicose, the leaflets of the valves no longer meet properly and the valves do not work (valvular incompetence). This allows blood to flow backwards and they enlarge even more. When a person stands up we can see varicose veins as large, bluish vessels that may feel like a rope. This process usually occurs in the veins of the legs, although it may occur in other parts of the body. Heaviness, tiredness, swelling, pain, muscle cramps, difficulties walking and even standing are some of other symptoms of the above disease.[2] Lower-limb varicose veins (VVs) are relatively common, with reported prevalence ranging between 10% and 30% worldwide. The three most significant varicose vein risk factors are family history, gender and age. There are many theories about other possible causes of varicose veins, these include pregnancy, overweight, diet, lack of physical activity, constipation, high blood pressure, standing at work etc.[3]
Current statistics reveal that nearly 2.7 million people worldwide, suffer from varicosities and the toll is ever increasing. Where India is concerned, experts are witnessing a growing prevalence of varicosities especially among women. Nearly, 15-20 per cent of women and 10-15 per cent of men suffer from varicose veins in India. An analysis of occupations in varicose vein patients has shown that the incidence was greater (67%) in people whose occupations involved prolonged standing and walking.[4] Varicose veins can have an effect in many ways such as difficulty in walking and standing, restlessness, psychological stress where a person’s quality of life gets affected. Nurses are at a greater risk of developing varicose vein in their lifetime. They work under physical overload due to long work hours and patient handling demands. Nurses are always at risk for injuries and illnesses as they stand most of the working period and it has a great effect on the lower limbs. Nurses are in crucial need of prevention of this condition because knowingly or by neglecting it may further lead to complications which can be avoided at earlier stage by following some of the preventive measures.[5] The best way to prevent varicose vein is leading an active lifestyle and healthy diet. Leg exercises such as jogging, walking and cycling will help simulate blood circulation. Other techniques include avoiding standing for long periods of time, sitting with legs uncrossed, leg massage and elevating legs when possible to relieve pressure on the veins, wearing flat shoes actually help tone the calf muscle more, which can help prevent varicose vein.

II. OPERATIONAL DEFINITIONS

Prevalence: The disease prevalence refers to all current cases (old and new) exiting at given point of time or over a period of time in a given population.[6]

In this study, prevalence of varicose vein refers to the no. of staff nurses identified as having varicose vein in terms of visible leg vein observed by the investigator when compared to the total samples of the study.

Risk factors: Risk factors are an attribute or exposure that is significantly associated with the development of a disease.[6]

In this study, risk factors refers associated demographic variables (age, marital status, weight, height, BMI, working area, shift duty hours per day, total years of clinical experience) and other specific risk factors like family history, use of oral contraceptives, history of pregnancy, low fibre diet, constipation, prolonged standing position, less physical activity, overweight and high blood pressure.

Preventive practices: According to dictionary, it means the act of stopping something from happening.

In this study, preventive practices refer to measures followed by the staff nurses to prevent development of varicose vein during their clinical practice.

Varicose vein: Varicose Veins are abnormally dilated veins with incompetent valves occurring most commonly in the lower extremities and lower trunk, usually in the great and small saphenous veins.1

In this study, varicose vein refers to the visible leg veins observed by the investigator.

Staff nurses: In this study staff nurses refers to nursing personnel who have completed B.Sc/Post Basic B.Sc Nursing Courses, Diploma in Nursing and midwifery (GNM) and registered with state nursing council and working in selected hospitals in Kamrup(M), Assam.

III. METHODS

The study was conducted in seven selected hospitals: GMCH, MMCH, GNRC Dispur, Apollo Hospital, Hayat Hospital, Arya Hospital as well as Marwari Hospital and Research Centre, Kamrup (M), Assam by adopting proportionate simple random sampling technique. The selected target population was 185 registered staff nurses (GNM, Post Basic or B.Sc Nurse, M.Sc Nurse) working in different areas (General wards and OPD, ICU/ITU, emergency ward and OT). Structured Self-Administered Questionnaire was used to collect data from the subjects. The data was collected from 5th March to 9th April, 2018. The name of the on duty staff nurses were collected from office of the Matron /nursing superintendent. Proportionate numbers of subjects were drawn by simple random technique. Selected subjects were contacted according to their respective shift of duty. The average time taken to administer the tool was 20-30 minutes.

IV. ETHICAL CONSIDERATION

Permission was obtained from institutional ethics committee of Regional College of Nursing for conducting the study. Administrative permission was obtained from the Medical Superintendent of Guwahati, Assam. Verbal and written consent was obtained from all the participants of the study. The subjects were assured of confidentiality of the data obtained.

V. RESULT

In this study of 185 staff nurses, prevalence of varicose vein was found to be 9.2%. Majority of the staff nurses, i.e., 109(58.9%) were in the age group of 21-30 years, 94(50.8%) were married, weight of majority of the staff nurses i.e. 97(52.4%) was in the range of 50-59kg, height of the staff nurses 114(61.6%) was in the range of 150-159cm, 154(83.24%) had normal body weight (BMI18.5-24.9KG/m²), 78(42.2%) were working in general wards and OPD. 159(85.9%) worked 6-8 hours shift duty per day, 110(59.5%) had 1-5 years of clinical experience. Risk factors of varicose vein among 185 staff nurses, 147(79.5%) were working in prolonged standing position, followed by 146(78.9) were overweight, 127(68.6%) had high blood pressure, 98(53.0%) were with less physical activity, 89(48.1%) had constipation, 75(40.5%) had history of pregnancy, 31(16.8%) were consuming low fiber diet, 23(12.4%) had positive family history of varicose vein and 17(9.2%) were using oral contraceptives. Findings related to preventive practices of varicose vein include majority of staff nurses 165(89.2%) were wearing flat shoes, 158(84.5%) avoided prolonged standing in one position, 150(81.1%) avoided tight clothes or shoes, 147(79.5%) were maintaining BMI, 144(77.8%) of subjects consumed high fibre diet, 133(71.9%) were consuming 2-3 litre water daily, 123(66.5%) nurses avoided eating extra salt, 95(51.4%) were practicing...
elevation of legs while at rest, 94(50.8%) were practicing leg massage, 82(44.3%) were maintaining proper body mechanics, 69(37.3%) were practicing regular leg exercises and 21(11.4%) were wearing compression stockings to prevent varicose vein. 111(60%) of the staff nurses had moderately adequate practice. Odd ratio was calculated for finding relationship between prevalence of varicose vein and risk factors at 95% confidence interval where significant relationship was found for family history [OR= 6.65, 95% CI 2.23-19.87], history of pregnancy [OR= 4.00, 95% CI 1.35-11.89], prolonged standing [OR= 2.12, CI 95% 1.46-9.68], less physical activity [OR= 7.68, 95% CI 1.70-34.63], overweight [OR= 4.20, 95% CI 1.46-12.10] and high blood pressure [OR= 0.87, 95% CI 0.81-0.93]. Association between Prevalence of varicose vein and demographic variables are calculated using Chi square test where statistically significant association were found for age of the nurses ($\chi^2$ =32.062, df=2, $p= 0.003$), marital status [X$^2$(1df) =15.119; p=0.004], weight (Kg)[$\chi^2$(3df) =9.559; p= 0.023],BMI[$\chi^2$(1df) =23.74; $p=0.0001$], shift duty hours per day [$\chi^2$(1df) =6.992; $P=0.008$] and total years of clinical experience [$\chi^2$(2df) =11.273; $P=0.009$].Again Marital status [$\chi^2$(2df) =22.45, $p<0.05$] and BMI [$\chi^2$(2df) =12.092, $p<0.05$] revealed significant association with the preventive practices among the nurses.

VI. DISCUSSION

Varicose veins (VV) of the lower limbs is considered as the most common vascular disorders in humans, creating serious signs and symptoms in patients and sometimes leads to surgical treatments and widespread morbidity. Varicose veins are one of the chief preventable diseases which are associated with veins. It is a serious disease, which poses threat of life of patient when effective and efficient measures are not taken.4

Lower-limb varicose veins (VV)s are relatively common, with reported prevalence ranging between 10% and 30% worldwide. A study conducted to assess the prevalence of varicose vein among nurses, an occupational group considered to be at high risk of varicose veinat a University Hospital, Korea. A total of 414 nurses participated in the survey and diagnostic testing. From the survey analysis and test results, the prevalence of VVs in nurses was estimated to be 16.18%.7

In this study prevalence of varicose vein among 185 staff nurses was found to be 9.2%; i.e among 185 staff nurses, 9.2% reported having varicose vein. In contrast to the present study finding, much higher prevalence was reported by the studies [8][9][10] were 73.9%, 47.7%, and 40% in men and 32% in women respectively.

This study revealed that among 185 staff nurses, majority 147(79.5%) was working in prolonged standing position which is the most significant risk factor of varicose vein. The results are supported by study by [11] conducted among 364 nurses working at Hospitals in Udaipur, Rajasthan found prolonged orthostasis (standing longer – 57.14%) beside patients bed; a significant factor of varicose vein. But a study found 22.5% of men and 22.6% of women work in prolonged standing which was quite low than the present study.12

In this study, majority of subjects i.e., 165(89.2%) were wearing flat shoes, 158(84.5%) avoided prolonged standing in one position, 150(81.1%) avoided tight clothes or shoes, 147(79.5%) were maintaining BMI, 144(77.8%) of subjects consumed high fibre diet, 133(71.9%) were consuming 2-3 litre water daily, 123(66.5%) nurses avoided eating extra salt, 95(51.4%) were practicing elevation of legs while at rest, 94(50.8%) were practicing leg massage, 82(44.3%) were maintaining proper body mechanics, 69(37.3%) were practicing regular leg exercises, 21(11.4%) were wearing compression socks or stockings to prevent varicose vein. A study by [13] supports this study findings.

There was significant relationshipwas found between prevalence of varicose vein and family history [OR= 6.65, 95% CI 2.23-19.87]. Similar study conducted by [14] supports the result. This study showed significant relationship between prevalence of varicose vein and pregnancy or delivery with [OR= 4.00, 95% CI 1.35-11.89], a study conducted by[15] on risk factors for varicose disease before and during pregnancy reveals the similar results. There was significant relationship between prevalence of varicose vein and prolonged standing [OR= 2.12, CI 95% 1.46-9.68]. Another study conducted by [16] on risk factors for varicose veins revealed standing posture with [OR= 2.2,95% CI: 1.2-3.9], a significant risk factor for varicose vein. Significant relationship was found between prevalence of varicose vein and overweight [OR= 4.20, 95% CI 1.46-12.10]. A similar study by[17] supported that obesity is strongly associated with varicocities in women. This study revealed significant association between high blood pressure and varicose vein [OR= 0.87, 95% CI 0.81-0.93]. However, in contrast, a study on prevalence of varicose veins of the lower limbs in the women working at a department store revealed no significant relationship between varicose vein with higher systolic and diastolic blood pressure.18

This study findings revealed that there was significant association between prevalence of varicose vein and age, marital status, weight, BMI, working area and total years of clinical experience at 0.05 level of significance. The findings were supported by similar studies by[19]

In this study results showed there was no significant relationship between prevalence of varicose vein and preventive practices adopted by the staff nurses. Similar study of [20] showed no significant correlation between lower extremity varicose veins and preventive measures.

In this study, association between level of preventive practices and selected demographic variables was found to be significantly associated to marital status and BMI at 0.05 level of significance. A similar study was found conducted by [21] that supports the results of this study.
In summary most common risk factors were found family history, history of Pregnancy/delivery, prolonged standing, less physical activity, overweight and high blood pressure showed significant relationship with prevalence of varicose vein. Among 185 nurses, most of them adopted moderately adequate practices to prevent varicose vein. Most of them were wearing flat shoes followed by avoiding prolonged standing at work.

VII. CONCLUSION

The study findings revealed prevalence of varicose vein among the staff nurses was almost equal to worldwide prevalence rate. Working in prolonged standing position was more frequently found risk factor with significant relationship with varicose vein. Other common risk factors were family history, history of pregnancy, overweight, less physical activity and high blood pressure which had a positive impact on developing varicose vein. Most of the subjects commonly using flat shoes, maintaining normal body weight and avoid prolonged standing as a preventive practice. In the study, maximum subjects adopted moderately adequate preventive practices towards varicose vein. The prevalence was also associated with age, marital status, weight, BMI and shift duty hours of the nurses. Therefore, suitable teaching program on varicose vein, its contributing factors and preventive measures for the staff nurses will further enhance their awareness and may help in early diagnosis, treatment as well as adapting healthy lifestyle. Emphasis should be given on appropriate strategies and adopting the correct practices during clinical duty hours.

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