Journal of Pharmaceutical Research International

33(43B): 294-299, 2021; Article no.JPRI.73398
ISSN: 2456-9119
(Past name: British Journal of Pharmaceutical Research, Past ISSN: 2231-2919, NLM ID: 101631759)

Knowledge and Practices on Risk Factors and Prevention of Varicose Vein among Operation Room Nurses of the Selected Hospitals

Premalatha Paulsamy[1*], Shadia Hamoud Alshahrani[2], Eva Lobelle E. Sampayan[1], Absar Ahmed Qureshi[3], Krishnaraju Venkatesan[3] and Pranave Sethuraj[4]

[1]College of Nursing for Girls, King Khalid University, Khamis Mushayit, Asir Province, Saudi Arabia.
[2]College of Nursing, Mahalah Branch for Girls, Asir Province, Saudi Arabia.
[3]Department of Pharmacology, College of Pharmacy, King Khalid Universiy, Abha, Asir Province, Saudi Arabia.
[4]Vee Care College of Nursing Chennai, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i43B32555
Editor(s):
(1) Dr. Shih-Chien Chien, Shu-Te University, Taiwan.
(2) Dr. Dharmesh Chandra Sharma, G. R. Medical College & J. A. Hospital, India.
Reviewers:
(1) Florence Pribadi, Universitas Ciputra Surabaya,, Indonesia.
(2) Santosh Karajgi, BLDEA's SSM College of Pharmacy and Research Centre, India.
(3) N.Anitha, Sultan-ul-Uloom College of Pharmacy, India.
Complete Peer review History: https://www.sdiarticle4.com/review-history/73398

Original Research Article

Received 23 June 2021
Accepted 03 September 2021
Published 11 September 2021

ABSTRACT

Lower-limb varicose veins (VVs) are frequent, and they're known to be more common in persons who work in jobs that require a lot of standing. Because nursing demands physical labour and lengthy periods of standing, women in this profession are at a higher risk of getting varicose veins. The aim of this study is to assess the knowledge and practices on risk factors and prevention of varicose vein among operation room nurses of the selected hospitals. A cross-sectional research design was used among registered nursing staff working in operation rooms of the selected hospitals. The convenient sampling technique was used to select fifty nurses. A structured pre-tested, validated tool was developed by the investigators to collect data from the nurses which include demographic as well as knowledge and practice variables of varicose veins. The findings of

**Corresponding author: Email: pponnuthai@kku.edu.sa;*

the present study show that 26% of nurses had inadequate knowledge and 14% of operation room nurses had poor practices. Also, there was a positive correlation between the knowledge and practice of nurses (r = 0.71). There was significant association for practice skills score with education and years of experience at p=0.05. The study concludes that to prevent occupational hazards in nursing, periodic health education and health promotion initiatives must be implemented.

Keywords: Knowledge; practices; risk factors; varicose Vein.

1. INTRODUCTION

Varicose veins grew more visible, twisted, and painful as a result of blood accumulation. Varicose veins are defined by ineffective valves that are swollen, convoluted, and thickened. Varicose veins affect approximately 10% to 20% of the general population. More than 80 million Americans experience the symptoms and complications of varicose veins, including 10%–15% of men and 20%–25% of women. The development of weak or defective valves inside the veins causes varicose veins [1].

Lower-limb varicose veins (VVs) are relatively frequent, with prevalence among common population ranging from 10% to 30% worldwide [2-3]. According to a population-based study on the prevalence of chronic venous disease (CVD) in Russia, 29% of the participants (31.5% of males, 27.5% of women) had primary varicose veins [4]. While the cause of VVs is unknown, exacerbating variables have been discovered. Increasing age, belonging to the female sex, obesity, multiple parities, pregnancy, heavy lifting, and long-standing hours [5-6], family history of venous disorders, smoking are all general risk factors.

A varicose vein is a dilated and convoluted vein. Blood collected in venous capillaries is normally transported upward and inward into superficial veins via one valve. These, in turn, drain into deeper veins buried beneath the fascia via perforator veins that travel through muscle tissue. Reflow into the vein was triggered by a valve leak. Unlike deep veins, which have solid walls and are encased in fascia, superficial veins cannot resist high pressure and become dilated and tortuous as a result. When one valve fails, it puts pressure on its neighbours, which can lead to retrograde flow and, as a result, varicosity throughout the entire superficial venous network in the area. The superficial veins of the legs are usually affected, as they are the ones that are more likely to be subjected to hydrostatic pressure as a result of gravity.

Varicose veins have no known treatment. There are two types of treatment for varicose veins: symptom alleviation and vein removal. Wearing support stockings, which compress and hold the veins in place, can help alleviate symptoms. This pressure prevents veins from stretching and hence reduces discomfort. Sitting, use of a footstool to support the feet while sitting, avoiding standing for long periods at a time, and lifting the legs whenever possible are all recommended. These methods work by lowering blood pressure in the veins of the legs. Long periods of standing cause blood to accumulate in the varicose veins under pressure. Walking, biking, and swimming are all good forms of exercise. Leg muscles assist in the pumping of blood via the veins when they are active. This relieves some symptoms and restricts the quantity of blood that gathers in the varicose veins, but it does not cure the illness [7].

Varicose veins are sometimes mistaken for a cosmetic issue. They can, however, lead to major complications such as pain, discomfort, leg cramps, ulceration, decreased quality of life, etc. Some of the preventive measures to be followed to prevent varicose veins are: maintaining a healthy weight, avoiding standing for long periods, regular exercise, a high-fiber, low-salt diet, keeping the legs up when sitting or lying down, avoid wearing high heels or tight socks or stockings and changing the sitting or standing position frequently, throughout the day [8].

Varicose veins are more common in police officers, teachers, nurses, shopkeepers, and bus conductors. As per the study done in Abha, the incidence of VV among both male and female school teachers was high (42%), with the majority in female instructors [9]. Nurses have two major risk factors for developing varicose veins: gender and prolonged standing during duty hours. The research involving nurses as a high-risk occupational group for VV have been identified in many countries. According to an Iranian survey, female nurses have a prevalence of 72% [10]. In an Indian study, 24.17% of participating nurses had lower limb VV [11].

Operating room nurses are considered a high-risk segment of hospital nurses. Operating room nurses are exposed to a variety of risk factors that cause musculoskeletal system problems. Static posture (e.g., prolonged standing with trunk and neck flexion, carrying tools and heavy objects, pulling/ pushing heavy equipment and patient trolleys) is one of the variables [12-13]. Following the preventive measures is the only technique to prevent VV among nurses [14].

Despite the fact that a variety of factors have been identified as risk factors for varicose veins, there is little data on their prevalence, risk factors and the practice of nurses to prevent varicose veins. Hence, this study was done to assess the knowledge and practices on risk factors and prevention of varicose vein among operation room nurses of the selected hospitals.

2. METHODOLOGY

Design: A descriptive and cross-sectional study used among registered nursing staff working in operation rooms (OR) of the selected hospitals.

Sample: The target population of the study was the nurses working in the operation rooms of the hospitals. Fifty Nurses working in the OR of two selected hospital were selected using convenient sampling technique.

Tools/instruments: A structured, self administered tool was developed by the investigators to collect data from the nurses. The self administered tool consisted of 3 sections. Section A: The socio-demographic characteristics of the participants such as gender, age, marital status, educational status, years of experience, role in the hospital, working hours and source of information about the varicose veins. Section B: It consisted of multiple choice questions on the knowledge of nurses on the risk factors and prevention of varicose veins. Section C: A checklist on the practice related to prevention of varicose veins. It had 10 'yes or no' statements related to weight, avoiding standing hours, exercise, diet, position of the legs while sitting or lying down, use of high heels or tight socks/stockings and change of positions throughout the day. The content validity of the tool was obtained from 7 experts from various nursing specialities and an orthopedician. The reliability of the tool was assessed after the pilot study by split – half method. The 'r' value of the tool was 0.79 which is highly reliable.

Procedures of data collection: The tool was self- administered questionnaire which took approximately 15 minutes to complete. It was distributed to the nurses through electronic media as Google docs such as email, what's app etc. The nurses were reminded about the tool thrice and it was ensured to complete all the questions. The study was conducted between Dec.2020 to Feb.2021.

Ethical consideration: Official Permission from the Medical Director was obtained as well as ethical permission was obtained from the Institutional ethical committee of the hospital. Consent from the participant nurses were collected before starting the study by explaining the purpose of the study, the role of the participants, confidentiality of the information and their right to withdraw from the study.

Statistical analysis: The socio demographic data, knowledge and practice of the participants were analyzed using frequencies and percentages distribution. The level of was knowledge and practice assessed using the mean and standard deviation. The relationship of level of knowledge and practice with socio-demographic characteristics was determined using a Chi-square test.

3. RESULTS

Table 1 shows that out of 50 nurses, a maximum of 46% were in the age bracket of 26 - 30 years, 74% were females and 62% were married. A maximum of 42% had B.Sc Nursing degree and 6% of them had PhD. Nurses with below 5 years of experience accounted for 28% of the total. Out of 50 nurses, 35 were clinical nurses, 66% had 12 hours duty per day and 46% of them gained knowledge about varicose vein and its prevention from their nursing curriculum.

According to Table 2, 26% of nurses had inadequate knowledge. However, 54% and 20% had moderately adequate and adequate knowledge on risk factors as well as preventive aspects of varicose veins respectively. The mean knowledge of nurses on risk factors and prevention of VV was 12.17 with SD of 2.81 for the maximum score of 20 for the knowledge questionnaire.

The Table 3 shows the distribution of practice skills score on risk factors and prevention of varicose vein. It shows that 14% of operation room nurses had poor practices, 46% were having good practices, 46% were having good practices, while 18% had excellent practices. Also, the correlation coefficient obtained between the knowledge and practice of nurses, 'r' is of 0.

71, indicated a positive correlation which means that the nurses who had better knowledge had good practices on prevention of varicose vein. Similar findings were also reported in few studies [12-13], which emphasises the need to improve the knowledge of nurses on preventive aspects, to have better practice.

Table 1. Distribution demographic characteristics of the Nurses

Demographic Variables	Frequency	%
Gender		
Male	13	26
Female	37	74
Age in years		
20 -25	14	28
26 -30	23	46
31 – 35	8	16
Above 35 years	5	10
Marital Status		
Single	19	38
Married	31	62
Educational status		
GNM	14	28
Bachalor's Degree	21	42
Master's Degree	12	24
PhD	3	6
Years of Experience in years		
Below 5 years	14	28
More than 5 years	36	72
Role in the Hospital		
Clinical Nurse	35	70
Supervisor	10	20
Teaching	5	10
Working Hours		
8 Hours	17	34
12 hours	33	66
Source of information about varicose vein		
Nursing curriculum	23	46
Newspapers/ Magazines	7	14
Friends and relatives	2	4
Internet and Mass media	18	36

Table 2. Distribution of knowledge score of nurses on risk factors of varicose vein and its prevention

Knowledge	Frequency	Percentage
In-adequate(< 50%)	13	26
Moderately Adequate (51 - 74%)	27	54
Adequate (>75%)	10	20

The findings of the study also shown that there was significant association for practice skills score with education and years of experience at p=0.05. The other demographic variables did not show any association either with knowledge and practice of nurses on varicose vein.

Table 3. Distribution of practice skills score of nurses on risk factors of varicose vein and its prevention

Practice Skills Score	Frequency	Percentage
Poor (< 10)	7	14
Fair (11 - 20)	11	22
Good (21 - 30)	23	46
Excellent (31 - 40)	9	18

4. DISCUSSION

Operating room nurses (OR nurses) are more likely to develop varicose veins than other nurses, according to popular belief in the nursing community. Hence, this study was undertaken to assess the knowledge and practices on risk factors and prevention of varicose vein among operation room nurses of the selected hospitals. According to the present study, 26% of nurses had inadequate knowledge. However, 54% and 20% had moderately adequate and adequate knowledge on risk factors as well as preventive aspects of varicose veins respectively. The Similar findings were reported in a study by Blessy Susan et al. [15] reported that 48.0% participants had good knowledge, and around 55.7% acquainted with better practices for the prevention of varicose vein.

In the present study, there was a positive correlation between the knowledge and practice of the nurses on risk factors and prevention of VV which indicates that the nurses who had better knowledge had good practices on prevention of varicose vein. Similar findings were also reported in few studies [16-17] which emphasises the need to improve the knowledge to have better practice. So, in the nursing practice settings, every attempt to be done to improve the knowledge of nurses on the common occupational hazards such as VV and the preventive measures through frequent in-service education programs.

The findings of the study also shown that there was significant association for practice skills score with education and years of experience at

p=0.05. The other demographic variables did not show any association either with knowledge and practice of nurses on varicose vein. It was in coordination with a study [17], to assess the knowledge regarding varicose vein and its management among ICU nurses in selected hospital of Indore city., it concluded that there was no evidence for an association between knowledge scores and certain socio-demographic factors of nurses (age, gender, marital status, education, area of previous working, total working experience, working hours) on the varicose vein and its' Management.

5. CONCLUSION

The study concludes that the nurses need to be given adequate and frequent in-service education and motivation to practice the preventive skills of varicose vein to lead a quality life.

ETHICAL APPROVAL

It is not applicable.

CONSENT

It is not applicable.

FUNDING

This research was funded by Deanship of Scientific Research at King Khalid University; grant number "RGP 2/186/42".

DECLARATION

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

ACKNOWLEDGEMENTS

The authors extend their sincere appreciation to the Deanship of Scientific Research at King Khalid University for funding this study through the Large Research Group Project under grant number "RGP 2/186/42".

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Leonard Syme S. The prevention of disease and promotion of Health: the need for a new approach, European Journal of Public Health. 17;(4):329-330.
2. Yun MJ, Kim YK, Kang DM, Kim JE, Ha WC, Jung K, Choi HW. A Study on Prevalence and Risk Factors for Varicose Veins in Nurses at a University Hospital. Safety and Health at Work. 2018:9(1):79–83.
DOI:10.1016/j.shaw.2017.08.005
3. Evans CJ, Fowkes FG, Ruckley CV, Lee AJ. Prevalence of varicose veins and chronic venous insufficiency in men and women in the general population: Edinburgh Vein Study. J Epidemiol Community Health. 1999;53:149e53.
4. Zolotukhin I, Seliverstov E, Shevtsov Y, Avakiants IP, Nikishkov AS, Tatarintsev AM, Kirienko AI: Prevalence and risk factors for chronic venous disease in the general Russian population. Eur J Vasc Endovasc Surg. 2017;54:752-758.
DOI:10.1016/j.ejvs.2017.08.033
5. Clark A, Harvey I, Fowkes, F: Epidemiology and risk factors for varicose veins among older people: cross-sectional population study in the UK. Phlebology. 2010;25:236-240.
DOI:10.1258/phleb.2009.009045
6. Bánhidy F, Ács N, Puhó E, Czeizel A: Varicose veins of lower extremities in pregnant women and birth outcomes. Cent Eur J Public Health. 2010;18:161-168.
DOI:1021101/cejph.a3596
7. Varicose Veins." Gale Encyclopedia of Nursing and Allied Health. . Retrieved August 16, 2021
Available:Encyclopedia.com: https://www.encyclopedia.com/medicine/encyclopedias-almanacs-transcripts-and-maps/varicose-veins-2
8. Varicose veins, Nursing: June 2015;45(6): 50.
DOI:10.1097/01.NURSE.0000464984.92562.3c
9. Dalboh A, Alshehri N, Alrafie A, Bakri K: Prevalence and awareness of varicose veins among teachers in Abha, Saudi Arabia. J Family Med Prim Care. 2020; 9:4784-4787.
DOI:10.4103/jfmpc.jfmpc_490_20
10. Sharif Nia H, Chan YH, Haghdoost AA, Soleimani MA, Beheshti Z, Bahrami N: Varicose veins of the legs among

nurses: Occupational and demographic characteristic. Int J Nurs Pract. 2015: 21:313-0.
Available: https://doi.org/10.1111/ijn.12268

11. Mishra N, Solanki S, Mishra S: Lower limb varicose veins among nurses: a cross sectional study in Udaipur. Int J Cur Res Rev. 2015;7:51-55.
12. Meijsen P, Knibbe HJ. Prolonged standing in the OR: A Dutch research study. AORN J. 2007;86(3):399-414
13. Kaima P, Reanpang T, Kulprachakarn K, P ongtam S, Rerkasem K. Chronic venous disease among nurses in operating room and outside operating room. Vessel Plus. 2020;4:37.
Available:http://dx.doi.org/10.20517/2574-1209.2020.50
14. Mary TJ. Treatment and Prevention of varicose vein. Journal of vascular nursing. 2007:15(3):97-103,399-414
15. Blessy Susan Babu, Vaishali Rajsinh Mohite, Rajsinh Vishwasrao Mohite. “A study to assess the knowledge and practices on risk factors and prevention of varicose vein among staff nurses”. JCR. 2020;7(19):4658-4661.
DOI:10.31838/JCR.07.19.545
16. Shakya R, Karmacharya RM, Shrestha R. et al. Varicose veins and its risk factors among nurses at Dhulikhel hospital: a cross sectional study. BMC Nurs. 2020; 19:8
Available:https://doi.org/10.1186/s12912-020-0401-8
17. Chanchal Malviya, Vipina Saji, A descriptive study to assess the knowledge regarding varicose vein and its management among ICU nurses in selected hospital of Indore city. International Journal of Current Advanced Research. 2018;5 (D):12462-12465.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle4.com/review-history/73398