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A Study Determining the Prevalence of Varicose Veins Amongst the Nurses in A Rural Population: A Survey Study

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ABSTRACT

BACKGROUND: Varicose veins are dilated, swollen veins, typically affecting the legs and appearing green, dark blue, or purple. Occupational factors, such as prolonged standing and muscle contraction, are key contributors to chronic venous insufficiency (CVI). Nurses, due to the physical demands of their profession, are particularly at risk for developing varicose veins.

AIMS AND OBJECTIVES: The study was to find the Prevalence of varicose veins among nurses using AVVQ in Pravara Rural Hospital, Loni.

METHODOLOGY: In this survey study, 100 rural nurses aged 30 to 50 who satisfied the inclusion and exclusion criteria were included. Data was analysed after each nurse was assessed using the AVVQ to determine the prevalence of varicose veins.

RESULTS: Varicose veins were reported by 31% of the 100 nurses who participated in the survey. The illness primarily affected nurses between the ages of 42 and 50. Lack of exercise, bad eating habits, and extended standing during work shifts were found to be major risk factors for varicose veins.

CONCLUSION: The prevalence of varicose veins among nurses in rural populations is relatively high, highlighting the need for preventive measures. workplace variables including extended standing and physical strain play a major role in the development of varicose veins. We may lower the risk by implementing ergonomic strategies into practice such as educating nurses on posture and movement techniques to prevent strain, encouraging regular physical activity, ensuring appropriate rest, and encouraging proper body mechanics

KEYWORDS: Varicose veins, nursing profession, prevalence, physical activity, quality of life, occupational health, rural nurses.

Introduction

Varicose veins are often thought to be larger, convoluted veins under the skin. The word "varicose veins" typically refers to the superficial veins of the leg, which can be green, dark blue, or purple in color, however any vein can become varicose. The condition is brought on by ineffective vein valves and diminished vein wall flexibility, which permit deoxygenated blood to be pumped back to the heart and to flow backward, pooling in the superficial veins and causing them to grow and become varicose. Along the leg's length, this frequently happens in the perforating veins that link the deep and superficial venous



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networks, as well as in the saphenofemoral and saphenopopliteal junctions.^[1] Dilated subcutaneous veins measuring three milli meters or more in diameter when measured upright are known as varicose vexins. They typically affect both legs, and when they are unilateral, they are found on each leg at the same frequency.^[2] The primary cause of varicose veins (VV), chronic venous insufficiency (CVI) in the lower limbs, affects up to 80% of people worldwide in mild form, with intermediate and severe instances accounting for 20% to 64% and 9% of cases, respectively. Certain lifestyle factors, like posture and prolonged standing at work, are linked to the genesis of CVI.[3] The prevalence of varicose veins ranges from 10% to 60% globally. Compared to up to 30% in the Western world, this prevalence is higher in Asia.[4] Varicose veins were found in 24.17% of nurses in the Udaipur study, with a higher frequency among female nurses than male nurses.^[5] The severity and extent of varicose veins may increase if underlying causes are not addressed and therapy is not started. More severe types of chronic venous insufficiency, such as venous ulcers and lower extremity edema, might arise and worsen functional status and quality of life. When varicose veins are big, damaged, or situated above bony prominences, they may thrombose or burst and bleed.^[6] In the lower limbs, varicosities are more common due to erect posture and the need to sustain a long blood column, which can promote valve weakening and incompetence. It affects 5% of adults. Primary varicosities caused on through Congenital valve failure or incompetence, Muscle weakness or atrophy caused by damaged smooth muscle and connective tissue in the venous wall, ParkesWeber syndrome, avalvulia, Klipple-Trenaunay syndrome, and inheritance (family history) with the FOXC2 gene The distribution of varices is uncommon in this case. Secondary varicosities include recurrent thrombophlebitis, prolonged standing at work, obstructions to venous return such as abdominal tumors, retroperitoneal fibrosis, lymphadenopathy, ascites, pregnancy (caused by the progesterone hormone), and obesity, prolonged constipation, congenital or acquired AV abnormalities, Tricuspid valve incompetence, iliac vein thrombosis.^[7] The epidemiology of varicose veins and CVI may be influenced by an occupation's ergonomics and physical demands. The majority of research shows that the incidence and severity of the condition may be elevated by working in a posture that causes prolonged orthostasis. The prevalence of varicose veins was found to be significantly greater among respondents who reported spending a large portion of their workday standing. Because of their work modalities, which include prolonged standing 3 at patient bedsides, the requirement for high mobility, and physically taxing positions, nurses are among the jobs with the highest potential risk of VVs.^[8] Varicose veins are a prevalent health issue that lowers quality of life (QoL) and has a negative impact on day-to-day living. In superficial veins of the lower extremities, venous reflux results in varicose veins. It results in major issues like lower extremity wounds that don't heal in addition to aesthetic issues. Varicose veins can cause blunt discomfort, a heavy feeling, cramping at night, itching or tingling, a burning or heated feeling, fatigue, swelling, and restless legs. Patients with chronic venous stasis have been shown to have a higher quality of life when they wear compression stockings, which are support devices that put pressure on the leg and stop venous oedema.^[9] Constant, low-intensity muscular tension is necessary to maintain static standing. Compression of the blood vessels caused by prolonged muscle contraction impairs lymphatic and blood circulation. Among the various lower limb problems caused by this illness, VV stands out.[3] Due to staffing shortages, nurses in rural locations frequently have to perform longer shifts and heavier workloads. Because extended immobility or standing in one position disturbs blood flow in the lower legs, these factors are linked to prolonged walking or standing, which raises the risk of varicose veins. Nurses at rural hospitals might have to handle more tasks, which would put more physical burden on them. The physical strains of rural healthcare settings, coupled with a lack of ergonomic support, might make venous issues



worse. Women in nursing professions are at high risk for developing varicose veins as 4 their job requires physical work and prolonged standing. Although multiple factors have been identified as risks for varicose veins, there is limited information on its prevalence and risk factor among nurses in India [10]

Research Methodology

- 1. **Source of data:** The data will be collected from the nurses working in Dr. Vitthal Rao Vikhe Patil Pravara Rural Hospital.
- 2. Method of Data Collection: Questionnaire Method
- 3. Type of Data: Qualitative.
- 4. Study Design: Descriptive
- 5. Study Setting: Pravara Rural Hospital.
- 6. Study Population: Nursing staff of Pravara Rural Hospital
- 7. Sampling method: convenient method
- 8. Sample Size: 100
- 9. Study Duration: 6 months
- 10. Method of data collection: The Aberdeen Varicose Veins Questionnaire

SELECTION CRITERIA

Inclusion criteria-

- Both male and female nurses
- Between 30 to 50 years of age

Exclusion criteria-

- Those who are below the 30 years of age
- Those who are not willing to participate
- Nurses currently pregnant

PROCEDURE







OBSERVATIONS & RESULTS

I) Age

Age	30-40	41-50	
No. of participants	48	52	



The above pie chart shows the distribution of ages, with the youngest being 33 and the oldest 50 years. Out of which 48% patients fall in the category of 30-40 years of age & 52 % between 41-50 years of age II) Gender



Table No.2: Gender Distribution

Gender	Male	Female
No. of participants	21	79



A female predominance is seen of 79% with the male holds 21% of the study population.

III) Pain duration

Table No.3: Pain duration

Pain duration	B/w 1-5	B/w 6-10
No. of days	22	09
No. of hours	13	18







The above chart shows the duration of pain of the study population.

IV) Swelling

Table No.4: swelling			
Swelling	None at all	Slight	Moderate
weeks	69	22	9



The pie chart above shows that 9% of patients experienced moderate swelling, 22% experienced mild swelling, and 69% reported no swelling at all in the past two weeks.

V) SUPPORT OF STOCKING /TIGHTS USAGE

Table No.5: support of stocking			
SUPPORT OF STOCKING			
Right		Left	
Yes	No	Yes	No
11	89	15	85



GRAPH NO.5 : SUPPORT OF STOCKING /TIGHTS USAGE



The graph above illustrates the support for stockings in individuals. For the right side, 11 individuals supported its use, while 89 did not. Similarly, for the left side, 15 individuals supported its use, whereas 85 did not.

VI) Integumentary Changes

Tuble 1000 Integumentary changes			
Integumentary changes	Right	Left	
Itching	10	15	
Purple discoloration	16	17	
Rash or Eczema	2	4	

Table No. 6. Integumentary Changes



GRAPH NO.6: Integumentary Changes

The graph above shows a higher incidence of itching, purple discoloration, and rash/eczema on the left side, with percentages of 48.3%, 54.8%, and 12.9%, respectively, compared to the right side, which recorded 32.2%, 51.6%, and 6.4%, respectively

VI) ADLs

Table No.1: ADLs

ADLs	No	Slightly affected	Moderately
			affected
Work/Housework	70	17	13
Leisure activities	83	12	5



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GRAPH NO.7 : ADLs

The graph above shows the impact on activities of daily living (ADLs). For work/housework, 13 individuals were moderately affected, 17 were slightly affected, and 70 reported no effect. Similarly, for leisure activities, 5 individuals were moderately affected, 12 were slightly affected, and 83 reported no effect.

DISCUSSION

The Present Study was conducted at Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni and It's constituted college Dr. APJ Abdul Kalam College of Physiotherapy. This was a Survey study conducted for a period of 6 months. The data were collected from the nurses working in Dr. Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni. The study included total of 100 participants as per inclusion and exclusion criteria with the mean age of (41.71 ± 4.76) years.

Table 1 shows the age distribution of Most patients are in one of the two age groups, with a slightly higher percentage (52%) in the 41–50 age group than in the 30–40 age group (48%). With the youngest patient being 33 and the oldest being 50, the chart generally depicts a middle-aged population, with neither group being younger nor older than 50. Hala S Abou-El Wafa et.al (2020) reported that the severity of varicosity rises with age or years of work, most likely because of increased surface vein pressure brought on by weakening leg muscles and vascular wall deterioration as people age.^[23]

Table 2 shows a female predominance is seen of 79% with the male holds 21% of the study population. Suhaila A Ali et.al (2022) in her study found that when compared to male nurses, female nurses had a higher prevalence of varicose veins. varicose veins are likely developed from the interaction of occupational risk factors like extended standing with other risk variables including age, hormonal fluctuations, family history, and the number of pregnancies.^[14]

PAIN DURATION

The two categories were used to classify the duration of pain: the number of days and the number of hours. The majority of participants in our study endure discomfort for 6–10 hours and 1–5 days. Dr. Athar



Mohammad et.al (2019) in his study found the most prevalent symptom was pain with noticeable veins, which could be present by itself or in conjunction with pigmentation, or oedema.^[34]

Swelling

In our study swelling varies, with 31% of the population reporting some kind of swelling, 9% reporting mild swelling, and 22% reporting considerable swelling. as per a study by Suhaila A. Ali et.al (2022) varicose veins are an indication of excessive blood pressure in the veins or chronic venous hypertension. Vein walls are weakened and valves are irrevocably destroyed by high blood pressure. This condition may result in heaviness, discomfort, and swelling.^[14] Dr. Athar Mohammad et.al (2019) in his study found that 20% of patients with varicose veins had limb swelling.^[34]

SUPPORT OF STOCKING /TIGHTS USAGE

The present study revealed that support for stockings in people is depicted in the above graph. 89 people did not use of the right side, compared to 11 who supported it. Likewise, 15 people were in favour of the left side's use, while 85 did not use. Pelin Tuncer Çoban et.al in their study found that patients who consistently wore compression stockings reported feeling better and experiencing less symptoms of oedema and pain. However, due to their irritation, nearly half of the patients did not wear compression stockings on a daily basis^[9]

Integumentary Changes

The present study revealed that symptoms are more common on the left side of the body than the right. On the left side, 48.3% of people report itching, compared to 32.2% on the right; on the left side, 54.8% report purple discoloration, compared to 51.6% on the right; and on the left side, 12.9% report a rash or eczema, compared to 6.4% on the right. This asymmetry implies that the symptoms may be more noticeable on the left side due to circumstances like venous insufficiency, circulation problems, or environmental variables. Chetan Naik et.al (2024) in his study found that fewer instances of glossy or discolored skin around bulging veins (6.2%) and visible spider veins (19.5%). These results are consistent with the idea that extended periods of sitting or standing can affect the development of varicose veins and the discomfort they cause.^[35] another study conducted by Nitin Joseph et.al (2016) found that Varicosity was more prevalent in the veins on the left side of the limbs than the right. In the left lower leg, the venous drainage through the pelvis takes a more convoluted path. This increases the danger on the left side because there is the crossover of the right common iliac artery on the left common iliac vein.^[36]

Activity of daily livings

The present study found that the majority of people were not considerably impacted by their leisure or work/housework activities. For work/housework, 17% people had a minor impact and 70% people had no influence at all. Similar trends apply to leisure activities, with 83% people reporting no effect and just five people expressing moderate difficulties. This implies that, on the whole, study participants were able to carry on with their occupational and recreational pursuits without experiencing significant interruptions. Chetan Naik et.al (2024) in his study found that the majority, 90% (189), did not experience difficulties carrying out daily activities, whilst 10% (21) reported difficulties.^[35]

Therefore, the present study was planned to determine the prevalence of varicose veins with the goal of providing better treatment and rehabilitation facilities to rural nurses in order to improve their quality of



life."

CONCLUSION

The prevalence of varicose veins among nurses in rural populations is relatively high, highlighting the need for preventive measures. workplace variables including extended standing and physical strain play a major role in the development of varicose veins. We may lower the risk by implementing ergonomic strategies into practice such as educating nurses on posture and movement techniques to prevent strain, encouraging regular physical activity, ensuring appropriate rest, and encouraging proper body mechanics.

LIMITATIONS AND FUTURE SCOPE LIMITATION:

- 1. Small sample size.
- 2. Study was conducted for lesser period of time.

FUTURE SCOPE:

- 1. Education and Awareness: Educating nurses about symptoms, prevention, and treatments to enable them to properly manage their health.
- 2. Ergonomic Interventions: Use proper footwear, adjustable seating, and posture guidelines to lessen strain and prevent varicose veins.
- 3. enhancing quality of life by offering counselling and social assistance to manage emotional and physical impacts.

ETHICAL APPROVAL: The study was approved by institutional ethics committee.

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