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Knowledge of Patients with Lower Limbs' Varicose Veins regarding the Disease

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Abstract

Background: Varicose veins represent a widespread vascular disorder with considerable implications for affected individual's health and well-being. **Aim of the study:** This study aimed to assess knowledge of patients with lower limbs' varicose veins regarding the disease. **Research design:** Descriptive research design was utilized to achieve the aim of the current study. **Setting:** The study was conducted in general surgery outpatients' clinic at Benha University Hospital, Benha, Qalyubia Governorate, Egypt. **Sample:** Purposive sample of 69 adult patients with grade 3 lower limbs' varicose veins. **Tools:** One tool was used; structured interviewing questionnaire; that included three parts; first: Patients' personal data, second: Patients' medical data, third: Patients' knowledge regarding lower limbs' varicose veins. **Results:** The results of the current study revealed that, the mean score of total knowledge regarding lower limbs' varicose veins among studied patients was 8.17 ± 1.63, while only 30.4% of them had satisfactory level of knowledge regarding the disease. **Conclusion:** More than two third of studied patients had unsatisfactory level of knowledge regarding lower limbs' varicose veins. **Recommendations:** Ongoing educational interventions are needed to improve patients' knowledge regarding lower limbs' varicose veins. Further research needs to be done on larger samples from different Egyptian regions to generalize findings.

Key words: Knowledge & Lower limbs' varicose veins.

Introduction

Varicose veins represent a widespread vascular disorder with considerable implications for affected individual's health and well-being. Varicose veins disease is characterized by prominent dilated and twisted veins, and usually occurs in the lower limbs **(Chaya et al., 2024)**. Incompetence of venous valves, weakness of the venous wall, high pressure in the veins, and inflammation are the key mechanisms that lead to varicose veins **(Shrestha et al., 2021)**.

Multiple attempts have been made to identify the factors responsible for the development of varicose veins in the lower limbs. There exists a complex interplay of environmental, genetic, histologic, and hemodynamic elements, as evidenced in literature. It is probable that the pathogenesis of varicose veins arises from a multifactorial imbalance involving more than one of these factors. Patients with varicose veins may be asymptomatic aside from the enlarged veins itself, but many of them experience discomfort or pain in the vein, sensations like aching, pressure, burning, itching, or tingling in the legs, and leg swelling. These symptoms typically worsen at the end of the day, and following prolonged sitting or standing **(Wąs et al., 2024)**.

Complications of varicose veins include hemorrhage from the varicose veins itself, thrombophlebitis, oedema, skin pigmentation, varicose eczema, atrophie blanche, lipodermatosclerosis, and venous ulceration **(Joshi et al., 2022)**. Treatment options for varicose veins include conservative

management such as compression therapy, and invasive management such as endovenous thermal ablation, injection sclerotherapy, and surgery. The indications for treatment are largely based on patient choice which in turn is affected by symptoms, potential for complications, available medical resources, cost, and insurance reimbursement **(Nwafor et al., 2022)**.

Understanding all about varicose veins disease is crucial for effective prevention, early detection, appropriate management, preventing complications, and ultimately enhancing the quality of life for those affected by this prevalent condition **(Chaya et al., 2024)**.

Significance of the study

Varicose veins disease is a prevalent vascular condition. The worldwide prevalence ranges from 20 to 60% and women are at two to three times more risk of developing varicose veins than men **(Naik & Monteiro, 2024)**. The prevalence of chronic venous diseases and varicose veins vary mostly by region. However, they are highest in Western countries. In Egypt, **Aly et al. (2020)** conducted a cross-sectional study on women and found that 51.1% of women aged 15-55 years old had varicose veins **(El-Sayed & Abu Zead, 2023)**. According to Benha University Hospital annual census (2022), the number of leg varicose veins patients in general surgery outpatient clinic was 480 patients **(Benha University Hospital statistics office, 2022)**.

Previous studies have noted a lack of knowledge and awareness regarding varicose veins, even in patients with varicose veins. A lack of understanding and awareness of this condition acts as a barrier to addressing the problem early and preventing its complications **(Salawati et al., 2024)**.

Therefore, assessing patients' knowledge regarding lower limbs' varicose veins is important. So, the current study was conducted to assess knowledge of patients with lower limbs' varicose veins regarding the disease.

Aim of the study

The aim of the current study was to assess knowledge of patients with lower limbs' varicose veins regarding the disease.

Research question

What is the knowledge of patients with lower limbs' varicose veins regarding the disease?

Subjects and Methods

Research design

Descriptive research design was utilized to achieve the aim of the current study.

Setting

The study was conducted in general surgery outpatients' clinic at Benha University Hospital, Benha, Qalyubia Governorate, Egypt.

Sample

Sample type: Purposive sample of 69 adult patients with grade 3 lower limbs' varicose veins.

Sampling technique: After defining the target population and determining inclusion & exclusion criteria, the researcher selected the subjects who fit the study to be included in the sample.

Calculation of sample size: The sample size was calculated based on the number of patients with lower limbs' varicose veins in general surgery outpatients' clinic, according to Benha University Hospital annual census (2022), which was 480 patients (120 patients with grade 3 lower limbs' varicose veins) using the following equation **(Thompson, 2012)**:

$$n = \frac{N \times p\,(1-p)}{\left((N-1 \times (d^2 \div z^2)) + p\,(1-p)\right)}$$

Where:

n = Sample size.

N = Community size (120 patients).

p = Ratio provides a neutral property = 0.125.

d = The error rate = 0.05.

z = Class standard corresponding to the level of significance = 0.95 and 1.96.

So, 69 patients were included in the study.

Inclusion Criteria: Patients with grade 3 lower limbs' varicose veins.

Exclusion Criteria: Patients with hearing impairment, dementia, Alzheimer's disease or psychiatric disorders, and unconscious patients.

Tools of data collection

One tool was used to collect data for the current study as follows:

Tool (I): Structured interviewing questionnaire:

This tool was designed by the researcher based on relevant literature **(Raetz et al., 2019, Aly et al., 2020, Ghosh et al., 2021, and Shernazarov et al., 2022)**. It included 29 questions and divided into **three parts** as follows:

Part (1): Patients' personal data:

This part was concerned with assessment of studied patients' personal data and contained 10 questions related to their age, gender, marital status, educational level, residence, Job/profession, nature of the work, weight, height and body mass index.

Part (2): Patients' medical data:

This part was concerned with assessment of studied patients' medical history, duration of lower limbs' varicose veins and family history of peripheral vascular diseases and contained 6 questions.

Part (3): Patients' knowledge regarding lower limbs' varicose veins:

This part was concerned with assessment of studied patients' knowledge regarding lower limbs' varicose veins and contained 13 multiple-choice questions.

Scoring system:

The answers of studied patients were compared with model answers, score (1) was given for the correct answer and score (0) for the incorrect answer & for the unanswered question. The total score for knowledge questions was (13). The knowledge score was converted into percent and categorized as follows:

- 75% - 100% was considered as satisfactory level of knowledge (Score 10-13).
- <75% was considered as unsatisfactory level of knowledge (Score less than 10).

Validity of tools

The tool was reviewed by a panel of five experts from medical surgical nursing field, Faculty of Nursing, Benha University. Jury involved two professors and three assistant professors to test the relevance, comprehension, clarity, and applicability of tool's content. Necessary modifications of the tool were done accordingly.

Reliability of tools

Tool's reliability was tested statistically to assure that the tool was reliable before data collection. Reliability of **tool I** was determined using Cronbach's alpha coefficient which was 0.686. This only proves that this tool has good reliability.

Ethical and administrative considerations:

- Permission to carry out the study was obtained from Scientific Research Ethics Committee in Faculty of Nursing, Benha University with code number **(REC-MSN-P 86)**, and from Medical director of Benha University Hospital after explanation of the aim & nature of the study.
- The researcher explained the aim & nature of the study to the study subjects and assured maintaining anonymity & confidentiality of data and that all gathered information will be used only for their benefit and for the purpose of the study.

• The study subjects were informed that their participation is optional, and that they have the right to withdraw at any time without any consequences.

• Verbal and written consent was obtained from each participant enrolled into the study.

Pilot study

Pilot study was performed on 10% (7 patients) of the total sample size to test the clarity and applicability of the tool and the time needed for its filling in. Needed modifications of the tool were done. So, the patients who were involved in the pilot study excluded from the study sample and replaced by others. Pilot study was done one month prior to data collection.

Field work

-The study implementation took period of about two months (from the beginning of November 2023 to the end of December 2023).

-The researcher divided the studied patients into seven groups. Each group contained about 9-10 patients in every session.

-The researcher attended general surgery outpatients' clinic at Benha University Hospital one day per week (Monday) from 9 AM until 2 PM.

-The researcher assessed the studied patients' personal data, medical data, and knowledge regarding lower limbs' varicose veins using **(Tool I)**. Interview took about 45 minutes.

Statistical analysis of data:

Data analysis was performed using the SPSS software (version 25). Kolmogorov-Smirnov test was used to determine the normal distribution of quantitative variables. Qualitative data was presented as a number and percent. Furthermore, quantitative data was described as mean or standard deviation. Chi-square tests were used to compare nominal variables and to examine the relation between qualitative variables. Fisher's exact test was applied on smaller sample sizes, alternative to the chi-square test, when the frequency count is < 5 for more than 20% of cells. Independent t test for parametric quantitative data of two groups and anova test for more than two groups. A p-value ≤ 0.05 was considered significant, and ≤ 0.001 was considered highly significant.

Results

Table (1) shows that, 47.8 % of studied patients their age was 50 -60 years with a mean age of 49.14 ± 0.99 years. Related to gender, 87.0 % of studied patients were females, and 76.9 % of them were married. Also, 53.6 % of studied patients obtained secondary education, and 73.9 % of them were residing in rural areas. In addition, 85.5 % of studied patients were working; 47.5 % of them their work required standing for long periods.

Table (2) shows that, mean weight of studied patients was 86.67 ± 13.96 kg, and mean height of them was 163.76 ± 8.15 cm. Also, 59.4 % of studied patients were obese.

Table (3) shows that, 53.6 % of studied patients were suffering from health problem other than lower limbs' varicose veins; 37.8 % of them were suffering from diabetes mellites. Also, 81.2 % of studied patients were suffering from lower limbs' varicose veins for less than 1 year. In addition, 59.4 % of studied patients had family member suffering from peripheral vascular disease; 100.0 % of them were suffering from lower limbs' varicose veins, and 63.4 % of them were second degree of kinship.

Table (4) shows that, the mean score of total knowledge regarding lower limbs' varicose veins among studied patients was 8.17 ± 1.63, while only 30.4% of them had satisfactory level of knowledge regarding the disease.

Table (5) shows that, there was a highly significant statistical relation between studied patients' total knowledge and their age with P-value= (<0.001**), where the lowest mean score of total knowledge was 6.81 ± 1.99 among patients whose age was 30-<40 years. Also, there was a highly significant statistical relation between studied patients' total knowledge and their educational level with P-value= (<0.001**), where the lowest mean score of total knowledge was 6.09 ± 0.83 among patients who can't read and write. In addition, there was a significant statistical relation between studied patients' total knowledge and their residence with P-value= (0.046*), where the lowest mean score of total knowledge was 7.94 ± 1.71 among patients from rural areas.

Table (6) shows that, there was a highly significant statistical relation between studied patients' total knowledge and presence of family member suffering from peripheral vascular disease with P-value= (<0.001), where the lowest mean score of total knowledge was 7.63± 1.72 among patients who did not have family member suffering from peripheral vascular disease. Also, there was a significant statistical relation between studied patients' total knowledge and period of suffering from lower limbs' varicose veins with P-value= (0.045*), where the lowest mean score of total knowledge was 7.94± 1.57 among patients who suffered from varicose veins for less than one year.

Table 1: Distribution of studied patients according to their personal data (n=69)

Patients' personal data	Variables	No.	%
Age (year)	21-<30	6	8.7
	30-<40	11	15.9
	40-<50	19	27.6
	50 -60	33	47.8
	Mean ± SD	**49.14±0.99**	
Gender	Male	9	13.0
	Female	60	87.0
Marital status	Single	2	2.9
	Married	53	76.9
	Divorced	7	10.1
	Widowed	7	10.1
Educational level	Can't read and write	11	15.9
	Read and write	5	7.3
	Secondary education	37	53.6
	University education	16	23.2
Residence	Urban	18	26.1
	Rural	51	73.9
Job	Working	59	85.5
	Not working	10	14.5
The nature of work (n=59)	Work requiring standing for long periods	28	47.5
	Work requiring sitting for long periods	9	15.3
	Work requiring continuous movement	22	37.2

Table 2: Distribution of studied patients according to anthropometric measurements (n=69)

Anthropometric measurements	Mean ± SD	
Weight (kg)	86.67 ± 13.96	
Height (cm)	163.76 ± 8.15	
BMI (kg/m^2)	**No.**	**(%)**
Normal weight (18.5 - 24.9)	10	14.5
Overweight (25–29.9)	18	26.1
Obesity (≥30)	41	59.4

BMI: Body mass index **t: independent t test**

Table 3: Distribution of studied patients according to medical data (n=69)

Medical data	Variables	No.	%
Suffer from any health problem other than lower limbs' varicose veins	Yes	37	53.6
	No	32	46.4
The health problem #	**(n= 37)**		
	Heart disease	5	13.5
	Hypertension	7	18.9
	Diabetes mellites	14	37.8
	Kidney disease	7	18.9
	Liver disease	4	10.8
	Bronchial asthma	2	5.4
	Osteoporosis	2	5.4
	Rheumatoid arthritis	1	2.7
Period of suffering from lower limbs' varicose veins	< 1 year	56	81.2
	1-<3 years	4	5.8
	3- <6 years	9	13.0
Presence of any family member suffering from peripheral vascular disease	Yes	41	59.4
	No	28	40.6
The peripheral vascular disease	**(n=41)**		
	lower limbs' varicose veins	41	100.0
The degree of kinship	**(n=41)**		
	First degree	14	34.1
	Second degree	26	63.4
	Third degree	1	2.4

 # Not mutually conclusive

Table 4: Studied patients' knowledge regarding lower limbs' varicose veins (LLVVs) (n=69)

Knowledge about LLVVs	Variables	Studied patients' knowledge	
		No.	%
Definition of LLVVs	Correct	46	66.7
	Incorrect	23	33.3
Causes of LLVVs	Correct	17	24.6
	Incorrect	52	75.4
Characteristics of spider veins	Correct	48	69.6
	Incorrect	21	30.4
The non-modifiable risk factors associated with LLVVs	Correct	48	69.6
	Incorrect	21	30.4
The modifiable risk factors associated with LLVVs	Correct	61	88.4
	Incorrect	8	11.6
Characteristics of the third grade of LLVVs	Correct	53	76.8
	Incorrect	16	23.2
Characteristics of the fourth grade of LLVVs	Correct	14	20.3
	Incorrect	55	79.7
Complications of LLVVs	Correct	36	52.2
	Incorrect	33	47.8
Diagnostic methods of LLVVs	Correct	42	60.9
	Incorrect	27	39.1
Effect of compression stockings for patients with LLVVs	Correct	62	89.9
	Incorrect	7	10.1
Effect of laser for patients with LLVVs	Correct	10	14.5
	Incorrect	59	85.5
Healthy lifestyle modifications that can reduce the edema	Correct	63	91.3
	Incorrect	6	8.7
Healthy lifestyle modifications that can prevent LLVVs	Correct	64	92.8
	Incorrect	5	7.2
Total	Satisfactory ≥75%	21	30.4
	Unsatisfactory <75%	48	69.6
	Mean ± SD	8.17 ± 1.63	

Table 5: Relation between studied patients' personal data with total mean score of knowledge regarding lower leg varicose veins (n=69)

Patients' personal data	Total mean score of knowledge			
	variables	Mean ± SD	Test	P value
Age (year)	21-<30	10.16 ± 0.75	F= 12.477	<0.001 **
	30-<40	6.81 ± 1.99		
	40-<50	7.36 ± 1.49		
	50 -60	8.72 ± 1.00		
Gender	Male	7.88 ± 1.69	T=-0.558	0.579 n.s
	Female	8.21 ± 1.63		
Marital status	Single	10.00 ± 0.00	F= 0.880	0456 n.s
	Married	8.09 ± 1.77		
	Divorced	8.28 ± 0.48		
	Widowed	8.14 ± 1.21		
Educational level	Can't read and write	6.09 ± 0.83	F= 30.150	<0.001**
	Read and write	6.20 ± 0.83		
	Secondary education	8.40 ± 1.27		
	University education	9.68 ± 0.70		
Residence	Urban	8.83 ± 1.20	T= 2.035	0.046 *
	Rural	7.94 ± 1.71		
Job	Working	8.15 ± 1.64	T=-0.262	0.794 n.s
	Not working	8.30 ± 1.63		

(n.s) not significant (*) Statistically Significant (p ≤0.05) (**) Highly Significant (p ≤0.001) (t) independent t test (F) anova test

Table 6: Relation between studied patients' medical data with total mean score of knowledge regarding lower leg varicose veins (n=69)

Patients' medical data	Total mean score of knowledge			
	variables	Mean ±SD	Test	P value
Suffer from any health problem other than lower limbs' varicose veins	Yes	7.89± 1.64	T=- 1.556	0.124 n.s
	No	8.50 ± 1.58		
Periods of suffering from lower limbs' varicose veins	< 1 year	7.94± 1.57	F=3.253	0.045*
	1-<3 years	8.75 ± 1.25		
	3- <6 years	9.33± 1.73		
Presence of any family member suffering from peripheral vascular disease	Yes	8.96 ± 1.10	T=-3.596	0.001**
	No	7.63± 1.72		

(n.s) not significant (*) Statistically Significant (p≤0.05) (**) Highly Significant (p ≤0.001) (t) independent t test (F) anova test

Discussion

Varicose veins are recurrently medical condition that affects a significant portion of the global population and can lead to significant morbidity & long-term costs for the patient **(El-Sayed & Abu Zead, 2023)**. Understanding all about varicose veins disease is crucial for effective prevention, early detection, appropriate management, preventing complications, and ultimately enhancing the quality of life for those affected by this prevalent condition **(Chaya et al., 2024)**. So, the current study was conducted with the aim of assessing knowledge of patients with lower limbs' varicose veins regarding the disease.

The discussion of the current study findings is presented in the following sequence:

Part I: Personal and medical data of studied patients:

Regarding studied patients' personal data, the results of the current study reported that about half of studied patients their **age** was 50 -60 years with a mean age of 49.14 ± 0.99 years.

These findings are in the same line with **Gong et al. (2020)** whose study was about "Reasons for patient non-compliance with compression stockings as a treatment for varicose veins in the lower limbs: A qualitative study" which conducted in China and revealed that the mean age of the study participants was 56.2 years.

These findings are not in the same line with **Shakya et al. (2020)** whose study was about "Varicose veins and its risk factors among nurses at Dhulikhel hospital: A cross sectional study" which conducted in Nepal and revealed that the mean age of participants with varicose veins was 26.8 ± 6.8 years.

As for gender, the results of the current study revealed that the majority of studied patients were females. This finding agrees with **Ali et al. (2021)** whose study was about "Comparative study between conventional stripping surgery and endovenous laser ablation in management of primary lower limb varicose veins" which conducted in Egypt and revealed that more than half of studied patients were females.

This finding disagrees with **Samane et al. (2020)** whose study was about "Clinical profile of patients with varicose vein: A cross sectional study from Vilasrao Deshmukh government institute of medical sciences, Latur, Maharashtra" which conducted in India and revealed that the majority of studied patients were males.

Concerning marital status, the results of the current study reported that more than three quarter of studied patients were married. This finding agrees with **Elamrawy et al. (2021)** whose study was about "Epidemiological, lifestyle, and occupational factors associated with lower limb varicose veins: A case control study" which conducted in Egypt and revealed that about three quarter of studied patients were married. This finding disagrees with **Shakya et al. (2020)** who reported that more than half of participants with varicose veins were unmarried.

Regarding educational level, the results of the current study reported that more than half of studied patients obtained secondary education. This finding is not in the same line with **Elamrawy et al. (2021)** who reported that the educational level of about three

quarter of studied patients was unschooling/basic education.

As regards to residence, the results of the current study revealed that about three quarter of studied patients were residing in rural areas. This finding is in the same line with **Abou-ElWafa et al. (2020)** whose study was about "Lower limb varicose veins among nurses: A single center cross-sectional study in Mansoura, Egypt" and reported that about three quarter of participants with lower limbs' varicose veins were residing in rural areas. While this finding is not in the same line with **Elamrawy et al. (2021)** who reported that the majority of studied patients were residing in urban areas.

Concerning job, the results of the current study reported that the majority of studied patients were working; about half of them their work required standing for long periods. These findings agree with **Samane et al. (2020)** who reported that almost two third of studied patients belong to the group whose occupation involved prolonged standing.

Regarding Body Mass Index (BMI), the results of the current study reported that more than half of studied patients were obese. This finding agrees with **Elamrawy et al. (2021)** who reported that most of studied patients were overweight and obese.

This finding disagrees with **Mulita et al. (2024)** whose study was about "Demographic and clinical characteristics of patients with varicose veins in Albania: A retrospective, single-centre analysis" and reported that more than half of studied patients had normal body weight.

Regarding patients' medical data, the results of the current study reported that more than half of studied patients were **suffering from health problem other than lower limbs' varicose veins**; about two fifths of them were suffering from diabetes mellites.

These findings are in the same line with **Nishibe et al. (2020)** whose study was about "Bioelectrical impedance analysis of leg edema and its association with venous functions in patients with saphenous varicose veins" which conducted in Japan and revealed that more than half of studied patients were suffering from health problem other than varicose veins.

These findings are not in the same line with **El-Sayed & Abu Zead (2023)** whose study was about "Effect of hot/cold water therapy on lower limb varicose vein: Patients' reported outcomes" which conducted in Egypt and revealed that about two third of the study participants were not suffering from health problem other than varicose veins.

As for period of suffering from lower limbs' varicose veins, the results of the current study revealed that more than three quarter of studied patients were suffering from lower limbs' varicose veins for less than 1 year. This finding is not in the same line with **Gong et al. (2020)** who reported that the length of time the study participants had been affected by lower limbs varicose veins ranged from 3 to 36 years.

Concerning presence of family member suffering from peripheral vascular disease, the results of the current study reported that more than half of studied patients had family

member suffering from peripheral vascular disease; all of them were suffering from lower limbs' varicose veins, and about two third of them were second degree of kinship.

These findings agree with **Ali et al. (2022)** whose study was about "Prevalence of varicose veins among nurses in different departments in Jazan public hospitals, Saudi Arabia: A cross-sectional study" and reported that about two third of participants with varicose veins had family history of varicose veins. These findings disagree with **Shakya et al. (2020)** who reported that about three quarter of participants with varicose veins did not have family history of lower limbs' varicose veins.

Part II: Studied patients' knowledge regarding lower limbs' varicose veins:

The results of the current study reported that the mean score of **total knowledge regarding lower limbs' varicose veins** among studied patients was 8.17 ± 1.63, while only about one third of them had satisfactory level of knowledge regarding the disease.

These findings are in the same line with **Shrestha et al. (2021)** whose study was about "Patient literacy on varicose veins in cases presenting at university hospital of Nepal subjected for surgical management of varicose veins" and revealed that about half of studied patients had low varicose vein literacy.

These findings are not in the same line with **Salawati et al. (2024)** whose study was about " Prevalence and awareness of varicose veins in Saudi Arabia, a cross- sectional study" and revealed that the study population had fair understanding and awareness of varicose veins.

Part III: Relation between studied patients' personal and medical data with total mean scores of knowledge regarding lower limbs' varicose veins:

Regarding relation between studied patients' personal data and total mean scores of knowledge, there was a highly significant statistical relation between studied patients' total knowledge and their **age** with P-value= (<0.001**), where the lowest mean score of total knowledge was 6.81 ± 1.99 among patients whose age was 30-<40 years.

These findings are consistent with the study done by **Taha et al. (2024)** whose study was about "Knowledge and awareness of varicose veins and its risk factors in Al-Qunfudah, Saudi Arabia" and revealed that there was a significant statistical association between the age and varicose veins awareness of the study participants.

These findings are not consistent with the study done by **Shrestha et al. (2021)** who reported that the age of the study participants had no significant association with their knowledge about varicose veins.

Also, there was a highly significant statistical relation between studied patients' total knowledge and their **educational level** with P-value= (<0.001**), where the lowest mean score of total knowledge was 6.09 ± 0.83 among patients who can't read and write.

These findings are consistent with the study done by **Manjula and Gnanalatha (2021)** whose study was about "A comparative study to assess the knowledge

regarding prevention and management of varicose veins among nursing personnel between autonomous and private hospitals, Hyderabad" which conducted in India and revealed that there was a significant association between the educational status of the study participants and their knowledge on prevention and management of varicose veins.

These findings are not consistent with the study done by **Taha et al. (2024)** who reported that there was not a significant statistical association between educational level and varicose veins awareness of the study participants.

In addition, there was a significant statistical relation between studied patients' total knowledge and their **residence** with P-value= (0.046*), where the lowest mean score of total knowledge was 7.94 ± 1.71 among patients from rural areas.

These findings are not consistent with the study done by **Shrestha et al. (2021)** who reported that the residence of the study participants had no significant association with their knowledge about varicose veins.

As regards to relation between studied patients' medical data and total mean scores of knowledge, there was a highly significant statistical relation between studied patients' total knowledge and **presence of family member suffering from peripheral vascular disease** with P-value= (<0.001**), where the lowest mean score of total knowledge was 7.63± 1.72 among patients who did not have family member suffering from peripheral vascular disease.

These findings disagree with **El-Sheikh et al. (2019)** whose study was about "Effectiveness of video assisted teaching program on knowledge about prevention and management of varicose veins among first year nursing students" which conducted in Egypt and revealed that there was no significant association between studied students' knowledge about varicose veins and presence of family history of varicose veins.

Also, there was a significant statistical relation between studied patients' total knowledge and **period of suffering from lower limbs' varicose veins** with P-value=(0.045*), where the lowest mean score of total knowledge was 7.94± 1.57 among patients who suffered from varicose veins for less than one year.

From the researcher point of view, relation between studied patients' total knowledge and period of suffering from lower limbs' varicose veins could be related to that; when the person suffers from a disease for a long period of time, they become more knowledgeable about that disease.

Conclusion

More than two third of studied patients had unsatisfactory level of knowledge regarding lower limbs' varicose veins.

Recommendations

Ongoing educational interventions are needed to improve patients' knowledge regarding lower limbs' varicose veins. Further research needs to be done on larger samples from different Egyptian regions to generalize findings.

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معرفة مرضى دوالي الساقين تجاه المرض

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تمثل الدوالي الوريدية اضطرابًا وعائيًا واسع الانتشار له آثار كبيرة على صحة الفرد ورفاهيته. وقد أشارت دراسات سابقة إلى وجود نقص في المعرفة والوعي فيما يتعلق بالدوالي الوريدية، حتى لدى المرضى الذين يعانون من الدوالي. لذلك هدفت هذه الدراسة إلى تقييم معرفة مرضى دوالي الساقين تجاه المرض. وقد أجريت الدراسة في عيادة الجراحة العامة بمستشفى بنها الجامعى، بنها، محافظة القليوبية، مصر، على ٦٩ من المرضى الذين يعانون من دوالي الساقين من الدرجة الثالثة. حيث كشفت النتائج أن أكثر من ثلثي المرضى الذين أجريت عليهم الدراسة لديهم مستوى غير مرضي من المعرفة فيما يتعلق بدوالي الساقين. وأوصت الدراسة بضرورة البرامج التعليمية المستمرة لتحسين معرفة المرضى فيما يتعلق بدوالي الساقين.

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