

Effectiveness of Video Assisted Teaching Program on Knowledge about Prevention and Management of Varicose Veins among First Year Nursing Students

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Abstract: Varicose vein is one of the common vascular abnormalities in the world. Patients with varicose veins are at high risk for developing deep vein thrombosis as venous stasis and injury often cause superficial phlebitis that can pass through perforating vessels to involve the deep venous system. Since this leads to many complications the high risk people such as nurses, teachers ,sales man and traffic police has to be aware about the varicose vein and its preventive and management measures .**Aim:** The aim of this study is to determine the effectiveness of video assisted teaching program on knowledge about Prevention and management of varicose veins among first year nursing students. **Design:** quasi experimental research design was utilized to achieve the aim of this study. **Setting:** The study was conducted at Faculty of Nursing Menoufia University. **Sample:** - A convenience sample of all first year undergraduate nursing students (300) who were admitted to Faculty of Nursing of the academic year 2018-2019 during the first term .**Tool :**two tools are used1: An interviewing questionnaire :to identify basic students personnel data and knowledge on prevention and management of varicose veins 2:Physiological method to assess weight, height and BMI of the students. **Result:** illustrated that, the mean age of students was 18.25 ± 0.46 years, 66.70% were female. The mean scores of knowledge about varicose vein before video assisted teaching program was 11.7 while after video assisted teaching program was 21.09.Regarding mean scores of knowledge about management of varicose vein before video assisted teaching program was 13.04 while after video assisted teaching program was 24.92. The mean scores of knowledge about prevention of varicose vein before video assisted teaching program was 6.01 while after video assisted teaching program was 11.72. There was statistical significant difference between before and after video assisted teaching program regarding all mean scores of knowledge.

Conclusions:. There was an increase in the knowledge level among first year nursing students about prevention and management of varicose veins following the video assisted teaching program. **Recommendations:.** Continuous education for all nursing students will help to promote and update their knowledge on prevention and management of varicose veins.

Keywords: Effectiveness, Video assisted teaching program, Knowledge, Varicose veins.

1. INTRODUCTION

Varicose veins (VV) of the lower limbs is considered as the most common vascular disorder in humans, creating serious signs and symptoms in patients and lead to surgical treatments and widespread morbidity. This is also one of the major causes of morbidity in the United States and Western countries. A varicose vein (VVs) is a palpable subcutaneous vein that is dilated tortuous, saccular, and generally larger than 3mm and mainly seen in lower limbs. It is invariably associated with local valvular incompetency and more common in women than me ⁽¹⁾.

According to the American Society for Vascular Surgery, as many as 40 million Americans have varicose veins. Statistics further show that 15% of men and 25% of women have varicose veins. According to the American Venous Forum, an estimated 23% of the US adult population suffers from varicose veins. Prevalence of 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^(2,3).

Lower-limb varicose veins (VVs) are relatively common, with reported prevalence ranging between 10% and 30% worldwide. While the etiology of VVs is not clearly known at present, exacerbating factors have been identified. General risk factors are increasing age, belonging to the female sex, family history of venous diseases, pregnancy, smoking, and overweight. Prolonged working in a standing position increases the prevalence of VVs and is an important occupational risk factor. Heavy lifting, also increases the likelihood of developing varicose veins as it increases pressure on the body, menopause, genetic weaknesses in the walls of the vein or in their valves, excessive pressure within the veins due to a low fiber diet which causes an increase in straining during bowel movements, and damage to the veins or to their valves resulting from inflammation also increase the risk of developing varicose veins^(4,5).

Today a lot of occupations and professions have sprung up where a person is required to either constantly stand up for a long time or made to sit with legs hanging down for a considerable time. Computer professionals, Nurses, Receptionists, Security guards, Traffic policemen, Salesmen, Teachers and persons doing Desk jobs are the worst sufferers of Varicose veins⁽⁶⁾.

Nurses are an integral component of health care delivery system. Nurses constitute the largest category of health care workers in most of the countries, and have a critical role in the healthcare delivery system that has to stand for longer time during their duties. Even though the exact cause of varicose vein is unknown there are some contributory factors responsible for varicose vein. Some of the major risk factors are age, gender, pregnancy, family history and prolonged standing⁽⁷⁾.

Among these risk factors nurses have the two important risk factors- gender & prolonged standing during duty hours. 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^(8,9).

Varicose veins may or may not be accompanied by symptoms such as fatigue, aching discomfort, feelings of heaviness or pain in the legs, fluid retention, swelling and pain in the feet and ankles, and discoloration. Prevention is a key factor related to varicose veins. Measures which are used to prevent varicose veins are Self-care - such as 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, participate in a daily walking program, avoid crossing the legs at the thighs, changing position frequently, elevating the legs when they are tired, and walking up the stairs rather than using the elevator or escalator is helpful in promoting circulation. Swimming is also good exercise for the legs⁽⁵⁾.

The nursing students are the future nurses they will occupy themselves in many fields of occupation and will spend most of the time standing during their working hours in the practical areas so they are prone to get lower limb symptoms like itchiness, cramps, burning sensation, pain especially when standing. They result in superficial swollen veins, which later develop to varicose veins. Immediate awareness is the best way to save the life successfully. Varicose veins are one of the chief preventable diseases which are associated with veins. It is a serious disease, which poses threat to life of patient when effective and efficient measures are not taken. So there is a need to educate the nursing students regarding this condition in order to prevent it⁽¹⁰⁾.

A quasi experimental study was carried out to determine the effectiveness of structured teaching Program(STP) on Knowledge regarding prevention and management of varicose vein in rural health center, found that there was a significant increase in the knowledge of the subjects between pretest and post-test⁽¹¹⁾.

Aim of the study: The aim of this study is to determine the effectiveness of video assisted teaching program on knowledge about Prevention and management of varicose veins among first year nursing students.

Study Hypotheses

- a. There will be significant difference between pre-test and post-test knowledge scores among first year nursing students.
- b. There will be significant association between knowledge scores with selected demographic variables

Operational Definitions:

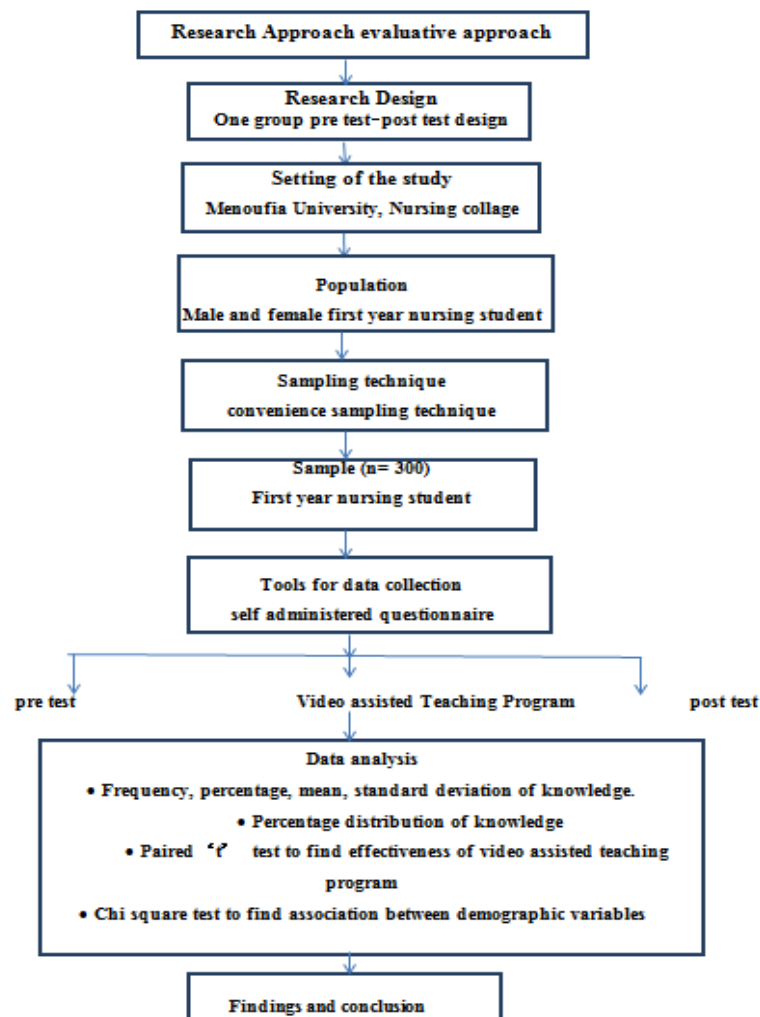
Video assisted teaching program (VTP): video assisted teaching program on prevention and management of varicose veins for nursing students are prepared by the researchers. Four videos containing short lectures about :general knowledge on varicose veins, risk factors , management and prevention of varicose 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 , walking and walking up the stairs rather than using the elevator or escalator is helpful in promoting circulation these will help to prevent the occurrence of varicose vein.

Management: include measures which are used to prevent the further worsening of varicose veins are Self-care - such as exercising, losing weight, not wearing tight clothes, elevating the legs, and avoiding long periods of standing or sitting. Wearing compression stockings is often the first approach to try before moving on to other treatments. Compression stockings are worn all day. They steadily squeeze legs, helping veins and leg muscles move blood more efficiently. Additional treatments for more severe varicose veins are sclerotherapy, vein stripping, ambulatory phlebectomy, endoscopic vein surgery.

Varicose veins: In this study it refers to dilated and twisted condition of the veins (usually those of legs) caused by structural changes in the walls or valves of the vessels.

SUBJECTS AND METHODS



Study Design

A quasi experimental research design was utilized to achieve the aim of this study.

Setting: The study was conducted at Faculty of Nursing Menoufia University.

Subjects: A convenience sample of all first year undergraduate nursing students (300) who were admitted to Faculty of Nursing of the academic year 2018-2019 during the first term.

Inclusion Criteria

1. Nursing students of College of nursing.
2. Both male and female nursing students.
3. Students who are present during the time of data collection.

Exclusion Criteria

Students who are not willing to participate in the study.

Tools: In order to achieve the aim of the study, two tools were developed and utilized by the researchers for data collection.

Tool: Structural interviewing questionnaire: It was developed by researchers to identify basic students personnel data and knowledge on prevention and management of varicose veins

Part one: Questions about the basic students personnel data such as: age, sex, hours of standing, previous history of varicose veins, family history of varicose veins, and doing regular exercises.

Part two : questions on the knowledge about prevention and management of varicose veins.

1. Questions related to knowledge on risk factors related to varicose veins (11)
2. Questions related to knowledge on management of varicose veins (13)
3. Questions related to knowledge on prevention of varicose veins (6)

Total numbers of questions were 30 each question carries one mark for incorrect answer and two mark for correct answer, total mark was 60

Scoring system:

Poor (<60%)

Fair (60-75%)

Good (>75%)

Tool two: Physiological method to assess weight, height and BMI of the students.

Method

1- A written permission was obtained from head of the Medical Surgical Nursing Department of Menoufia Faculty of Nursing after explaining the aim of the study.

2- **Tools development:** The tool are constructed by the researchers after reviewing the relevant literature ⁽¹²⁾.the tool are tested for content validity by 5 experts specialized in Medical Surgical Nursing to ascertain relevance and completeness. Then the tool are tested for reliability by using a test- retest method and Pearson correlation coefficient formula was used. It was found to be 0.87. Modifications were done accordingly to ascertain relevance and completeness

3- Ethical consideration: first year nursing students were included in the study, and then a clear and simple explanation about the nature and aims of the study was given to each participant. After that, an written consent was obtained from each participant to get his/ her acceptance as well as cooperation. All participants were informed about confidentiality of the data and they have the right to withdraw from the study at any time without any effect on their learning.

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4- Prior to the actual study, a pilot study was conducted on 10% of the study sample (30 students) to test study tools for its clarity, feasibility and applicability and determine the required time to fulfill these tools and then necessary modifications were carried out accordingly. Those who shared in the pilot study were excluded from the study sample.

5- Data collections :

- Data were collected over a period of 2 months from the beginning of November to the end of December 2018.
- Students who agreed to participate in the study were randomly and alternatively divided into 3 groups, 100 students for each group .

- Students of all groups were interviewed in their classroom to assess students personnel data and Pre-test knowledge on prevention and management of varicose veins .It took about one hour for each group.

- video assisted teaching program on prevention and management of varicose veins for nursing students are prepared by the researchers. Four videos containing short lectures about:

- 1- General knowledge on varicose veins
- 2- knowledge on risk factors related to varicose veins
- 3- knowledge on management of varicose veins
- 4- knowledge on prevention of varicose veins

the video takes about 30- 45 minutes for each lecture. Four MS Power Point files were developed, each of these files focused on one topic, .To produce the videos, each of these files was presented as a slide show and sound. Students were provided a CD or flash drive of the video contents.

- The program had a total of 4 hours’ class time spread over a period of two weeks two hours each week. For each group.
- Students Received the lecture of general knowledge and risk factors of varicose veins for the first week. prevention and management of varicose veins for the second week.
- Conduct post-test after the teaching program using the same structured knowledge questionnaire .

3. STATISTICAL ANALYSIS

The data collected were tabulated & analyzed by SPSS (statistical package for the social science software) statistical package version 22 on IBM compatible computer. Two types of statistics were done:

- Descriptive statistics: were expressed as mean and standard deviation (X+SD) for quantitative data or number and percentage (No & %) for qualitative data.

Analytic statistics: Chi-square test (χ^2):It is the test of significance used to study association between two qualitative variables, t- test: is a test of significance used for comparison between two groups of normally distributed quantitative variables and Spearman correlation was used for quantitative variables that were not normally distributed or when one of the variables is qualitative-value at 0.05 was used to determine significance regarding-value > 0.05 to be statistically insignificant, P-value \leq 0.05 to be statistically significant and P-value \leq 0.001 to be highly statistically significant.

Table (1): Distributions of socio-demographic characteristics of studied students (n=(300))

<i>Items</i>	<i>No (n=300)</i>	<i>%</i>
Age of year		
18	227	75.7
19	70	23.3

20	3	1.0
<i>Mean ± SD</i>	18.25 ± 0.46	
Marital status		
Married	3	1.0
Unmarried	297	99.0
Family history of varicose vein.		
Yes	13	4.3
No	287	95.7
Doing regular exercise		
No	300	100
History of varicose vein		
No	300	100
	<i>Mean ± SD</i>	<i>Minimum</i> <i>Maximum</i>
hours of standing per day	8.46 ± 0.85	8.00 14.00

Table (1): Showed that, the mean age of studied sample was 18.25 ± 0.46years. The majority of them (99%) were unmarried. In relation to family history of varicose vein the majority of them (95.7%) not had family history of varicose vein. All students don't had history of varicose vein and don't carry regular exercise. The mean hours of standing per day was 8.46 ± 0.85.

Figure (1):Percentage distribution of gender of studied students (n=(300))

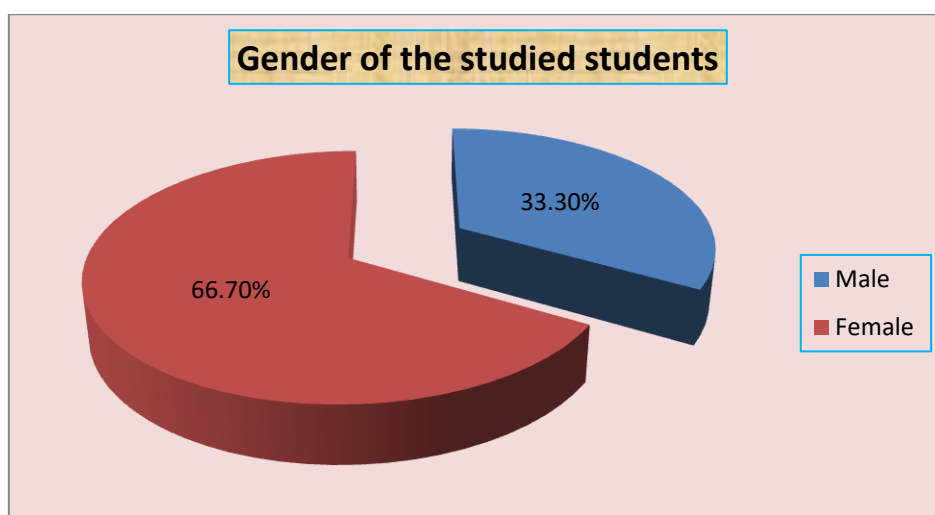


Figure (1): clarified that more than two thirds of the students(66.70%) were female.

Table (2): Means of the anthropometric measurements of the studied students.

Items	<i>Mean ± SD</i>	<i>Minimum</i>	<i>Maximum</i>
Weight	68.77 ± 10.82	42.00	100.00
Height	166.68 ± 6.82	150.00	182.00

BMI.	21.33 ± 3.61	14.00	36.33
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Table (2): Revealed that, the mean weight and height were 68.77 ± 10.82 and 166.68 ± 6.82 respectively. The mean BMI was 21.33 ± 3.61 .

Table (3): Distribution of students' knowledge about Varicose vein among the studied students on pre and post video assisted teaching program (n=300)

Knowledge items	Response about knowledge questions about Varicose vein among the studied students pre and post intervention								χ^2 Fisher's Exact Test	P-Value
	Pre test (n= 300)				Post-test (n=300)					
	Incorrect answer		correct Answer		Incorrect Answer		correct Answer			
	No	%	No	%	No	%	No	%		
Definition of varicose vein	297	99.0%	3	1.0%	45	15.0%	255	85.0%	431.8	<.001
The cause of varicose veins	298	99.3%	2	0.7%	51	17.0%	249	83.0%	417.88	<.001
Common site of occurrence of varicose veins.	297	99.0%	3	1.0%	9	3.0%	291	97.0%	553.18	<.001
Primary varicose veins are.	298	99.3%	2	0.7%	10	3.3%	290	96.7%	553.35	<.001
The most common cause of varicose veins	297	99.0%	3	1.0%	10	3.3%	290	96.7%	549.43	<.001
Associated risk factor of varicose veins	300	100.0%	0	0.0%	7	2.3%	293	97.7%	572.64	<.001
Symptom of varicose veins	300	100.0%	0	0.0%	10	3.3%	290	96.7%	561.29	<.001
The skin color changes of varicose veins is called	300	100.0%	0	0.0%	28	9.3%	272	90.7%	497.56	<.001
Varicose veins are commonly diagnosed by.	296	98.7%	4	1.3%	31	10.3%	269	89.7%	471.99	<.001
Telangiectasia is	300	100.0%	0	0.0%	23	7.7%	277	92.3%	514.55	<.001
The potential complication of spider vein is.	297	99.0%	3	1.0%	27	9.0%	273	91.0%	489.13	<.001

Table1 (3):showed that, there was statistical significant difference between pre and post video assisted teaching program regarding all items of knowledge about varicose vein (P=<.001).

Table (4): Distribution of students' knowledge about management of varicose vein among the studied students on pre and post video assisted teaching program (n=300)

Management items	Response about knowledge questions of management of Varicose vein among the studied students pre and post intervention								χ^2 Fisher's Exact Test	P-Value
	Pre test (n= 300)				Post-test 1 (n=300)					
	Incorrect answer		correct Answer		Incorrect Answer		correct Answer			
	No	%	No	%	No	%	No	%		

The test commonly used to determine varicose veins is	300	100.0%	0	0.0%	28	9.3%	272	90.7%	497.56	<.001
The action of diosmin used to treat varicose veins is	300	100.0%	0	0.0%	11	3.7%	289	96.3%	557.56	<.001
Compression stockings are used to	297	99.0%	3	1.0%	45	15.0%	255	85.0%	431.82	<.001
When should you wear compression stockings	295	98.3%	5	1.7%	8	2.7%	292	97.3%	549.18	<.001
Ideal pressure of the compression stocking to manage varicose vein would be	300	100.0%	0	0.0%	34	11.3%	266	88.7%	477.84	<.001
The reasons an individual should not wear compression stocking is	300	100.0%	0	0.0%	23	7.7%	277	92.3%	514.55	<.001
Compression stockings to be removed to prevent complications once in	297	99.0%	3	1.0%	25	8.3%	275	91.7%	495.89	<.001
How long to wear compression stockings for varicose veins	300	100.0%	0	0.0%	6	2.0%	294	98.0%	576.47	<.001
Unna boot is comprised of	300	100.0%	0	0.0%	16	5.3%	284	94.7%	539.24	<.001
Curative management for varicose veins are	300	100.0%	0	0.0%	41	13.7%	259	86.3%	455.72	<.001
An important measure after an varicose vein surgery is	300	100.0%	0	0.0%	30	10.0%	270	90.0%	490.91	<.001
Sclerotherapy involves	300	100.0%	0	0.0%	26	8.7%	274	91.3%	504.29	<.001
After sclerotherapy elastic bandage applied to maintain pressure for	300	100.0%	0	0.0%	32	10.7%	268	89.3%	484.34	<.001

Table1 (4):showed that, there was statistical significant difference between pre and post video assisted teaching program regarding all items of knowledge about management of varicose vein (P=<.001).

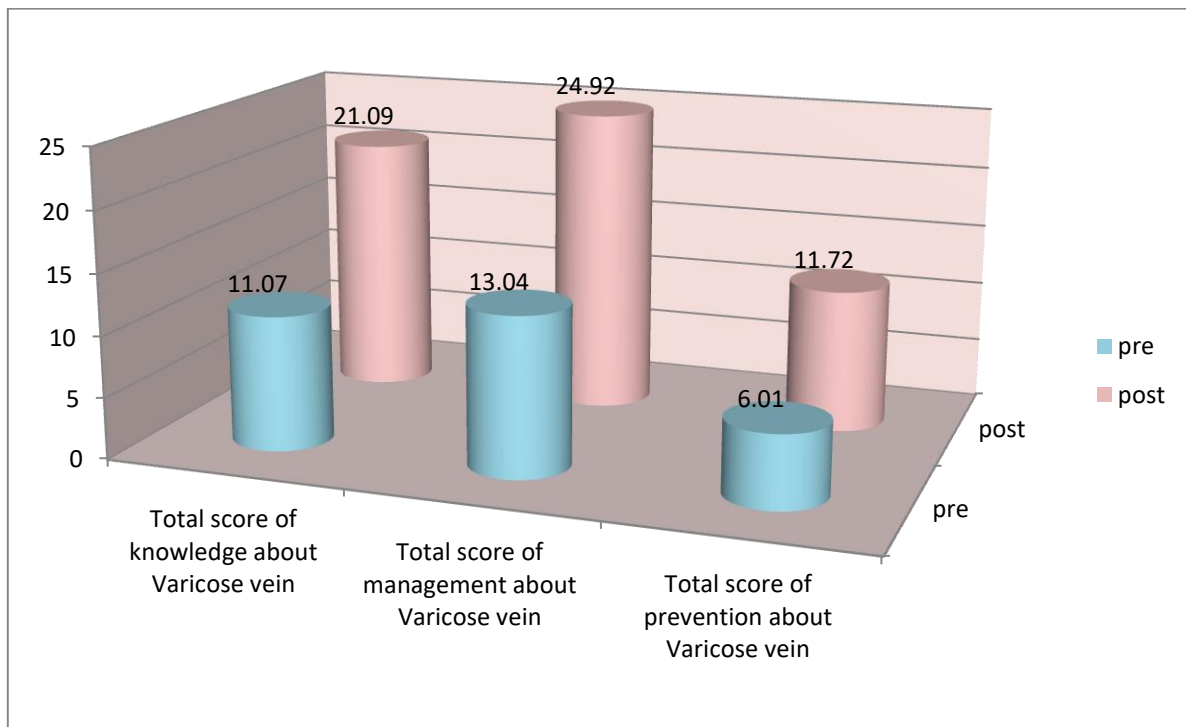
Table (5): Distribution of students’ knowledge about prevention of varicose vein among the studied students on pre and post video assisted teaching program (n=300)

prevention items	Response about knowledge questions of prevention of Varicose vein among the studied students pre and post intervention								Fisher's Exact Test	P-Value
	Pre test (n= 300)				Post-test 1 (n=300)					
	Incorrect answer		correct Answer		Incorrect Answer		correct Answer			
	No	%	No	%	No	%	No	%		
The leg elevation during sleep to prevent varicose veins is	299	99.7%	1	0.3%	13	4.3%	287	95.7%	546.18	<.001
Which is not considered for prevention of varicose veins is	298	99.3%	2	0.7%	20	6.7%	280	93.3%	517.08	<.001
The following action that cannot prevent varicose veins is	300	100.0%	0	0.0%	21	7.0%	279	93.0%	521.50	<.001
The activity to reduce pressure in lower limbs while working is	300	100.0%	0	0.0%	12	4.0%	288	96.0%	553.85	<.001
Which exercises are used to prevent varicose veins	300	100.0%	0	0.0%	9	3.0%	291	97.0%	565.05	<.001

Exercise helps in varicose veins to	300	100.0%	0	0.0%	9	3.0%	291	97.0%	565.05	<.001
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Table1 (5):showed that, there was statistical significant difference between pre and post video assisted teaching program regarding all items of knowledge about prevention of varicose vein (P=<.001).

Figure (2): Mean scores of knowledge about varicose vein among studied students on pre and post video assisted teaching program



Figure(2) :Presents that, mean scores of knowledge about varicose vein before video assisted teaching program was 11.7 while after video assisted teaching program was 21.09.Regarding mean scores of knowledge about management of varicose vein before video assisted teaching program was 13.04 while after video assisted teaching program was 24.92. The mean scores of knowledge about prevention of varicose vein before video assisted teaching program was 6.01 while after video assisted teaching program was 11.72. There was statistical significant difference between before and after video assisted teaching program regarding all mean scores of knowledge.

Figure (3): Mean scores of total knowledge about varicose vein among studied students on pre and post video assisted teaching program

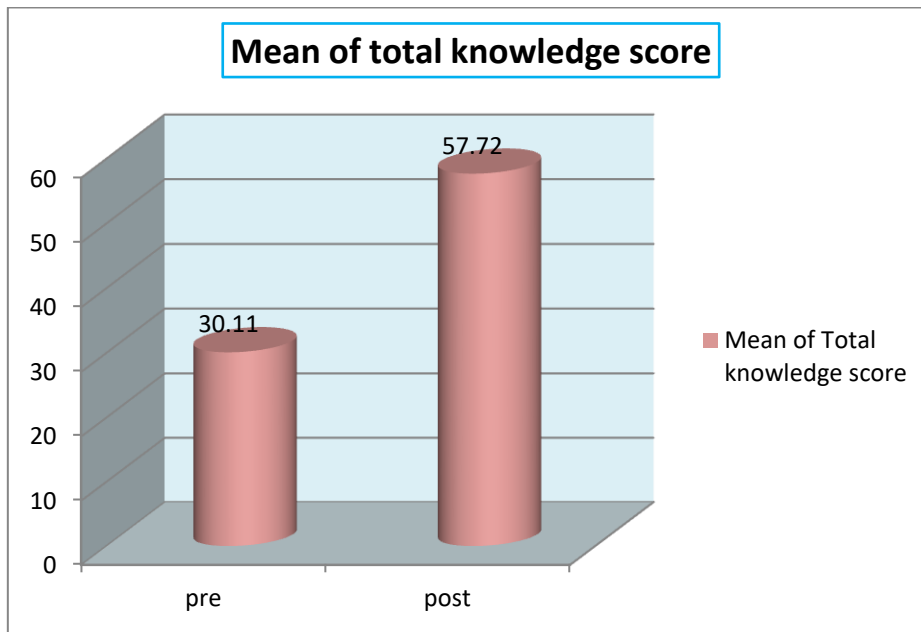


Figure (3): showed that the mean scores of total knowledge about varicose vein before video assisted teaching program was 30.11 while after video assisted teaching program was 57.72. There was statistical significant difference between before and after video assisted teaching program regarding mean scores of total knowledge.

Figure (4): Levels of total knowledge about varicose vein among the studied students pre and post video assisted teaching program

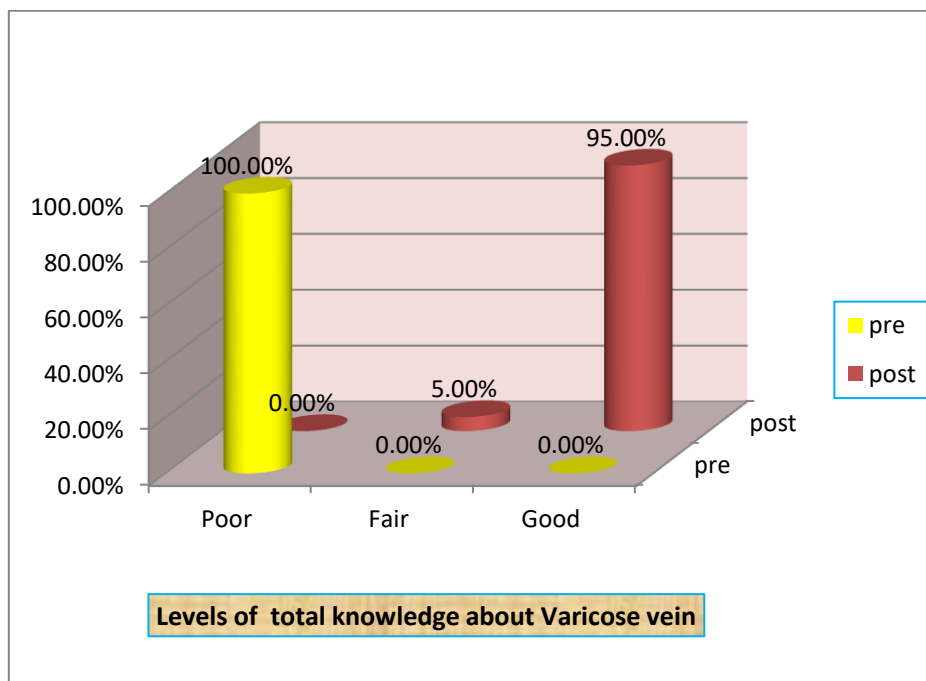


Figure (4): Revealed that 100% of students had poor level of knowledge about varicose vein before video assisted teaching program .While after video assisted teaching program 95% of students had good knowledge.

Figure (5): Levels of total knowledge about management of varicose vein among the studied students pre and post video assisted teaching program

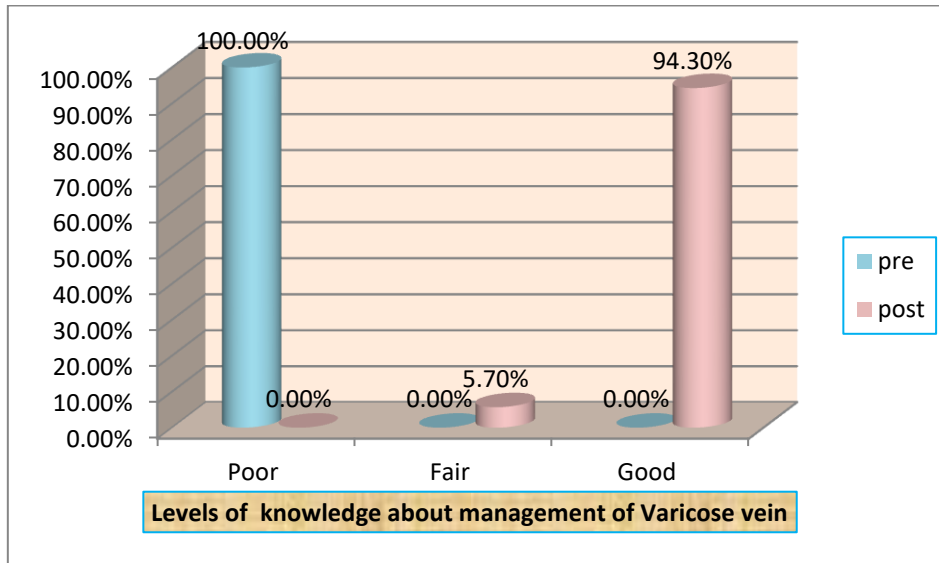


Figure (5): Reports that 100% of students had poor level of knowledge about management of varicose vein before video assisted teaching program .While after video assisted teaching program 94.30% of students had good knowledge about management of varicose vein.

figure (6): Levels of total knowledge about prevention of varicose vein among the studied students pre and post video assisted teaching program

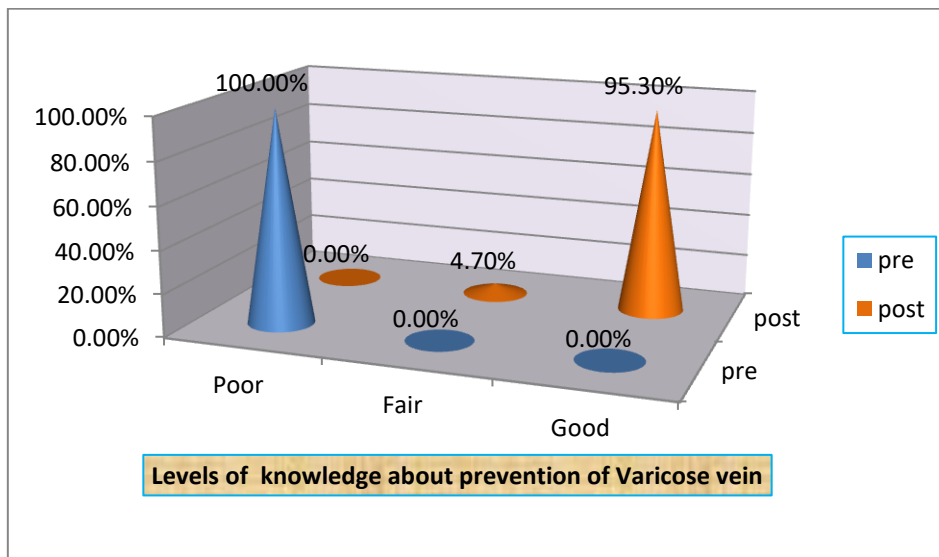


Figure (6): Reports that 100% of students had poor level of knowledge about prevention of varicose vein before video assisted teaching program .While after video assisted teaching program 95.30% of students had good knowledge about prevention of varicose vein.

Table (6): Mean of total scores of knowledge about varicose vein among studied students on pre and post video assisted teaching program in relation to their demographic data.

Variables	Mean of total scores of knowledge about varicose vein among studied students on pre and post video assisted teaching program			
	Pre	t-test or F P -value	Post	t-test or F P -value
	Mean ± SD		Mean±SD	
Age		Anova Test		AnovaTest

18.00	30.09 ±0.33	2.117	57.69 ±2.41	3.326
19.00	30.17 ±0.38	.122	57.96 ±2.30	.037
20.00	30.33 ±0.58		54.33 ±4.62	
Marital status		t test		t test
Married	30.00 ±0.00	-.583-	56.67 ±3.05	-.758-
Unmarried	30.11 ±0.34	.560	57.73 ±0.02	.449
Sex		t test		t test
Male	30.13 ±0.33	.547	57.83 ±2.10	.538
Female	30.11 ± 0.34	.538	57.67 ±2.75	.591
Family history of varicose vein.		t test		t test
Yes	30.07 ±0.28	-.397-	57.77 ±3.32	.070
No	30.12 ±0.34	.692	57.72 ±2.39	.944

Table (6): Illustrated that there was no significant association between pre-test knowledge scores and selected demographic variables. Mean of total scores of knowledge about varicose vein post video assisted teaching program was 57.69 ±2.41, 57.96 ±2.30 and 54.33 ±4.62 of students who were ages 18,19 and 20 years respectively. Mean of total scores of knowledge about varicose vein post video assisted teaching program was 56.67 ±3.05 among married students and was 57.73 ±0.02 among unmarried students.

Table (7): Pearson Correlation between total knowledge about varicose vein and age and anthropometric measurements of the studied students on pre and post video assisted teaching program.

Items	total knowledge about varicose vein			
	Pre		Post	
	r	P -value	r	P -value
Age	.116*	.044	-.012-	> 0.05
hours of standing per day	.017	> 0.05	-.088-	> 0.05
Height	-.047-	> 0.05	.046	> 0.05
Weight	-.038-	> 0.05	.125*	.030
BMI	-.061-	> 0.05	.148*	.010

*Correlation is significant at the 0.05 level (2-tailed).

Table(7) : Revealed that after video assisted teaching program there was significant association between weight and BMI of studied students and their total knowledge about varicose vein.

4. DISCUSSION

Regarding demographic status of the students , the current study revealed that mean age of subjects of in the present study was about nineteen years, more than two thirds of the students were female .The majority of them were unmarried. In relation to family history of varicose vein the majority of them not had family history of varicose vein. All students don't had history of varicose vein and don't carry regular exercise. The mean hours of standing per day was 8.46 ± 0.85. The mean BMI was 21.33 ± 3.61.The results of this study showed that the more than two thirds of the students were female this may be due to that males were recently entered the institutions and faculties of nursing in Egypt.

The findings of the study were consistent with other study conducted by Pradap ⁽¹³⁾ .found that the demographic information of the sample revealed that the entire sample belonged to age group 17-19 years, the majority of sample were females. This result was in agreement with Kurtz, et al., ⁽¹⁴⁾ who stated that the majority of the sample were females and also in line with Yacout and Abou Shosha ⁽¹⁵⁾ who stated that less than three quarters of studied students were female. In

contrast to this result **Yacout and Abou Shosha**⁽¹⁵⁾ illustrated that the majority of sample were above 20 years. This contradiction may be attributed to that the researchers in current study select to study the first year undergraduate students only.

These findings similar to another study except age demonstrated that among 100 staff nurses surveyed to assess the knowledge regarding risk factors and preventive measures of varicose veins, Among 100 nurses, majority belong to the age group of 25 years, maximum number of subject were female gender ,Majority of subjects were single ⁽⁹⁾ . Also study supported this study ,the occupational risk factors responsible for lower limb varicose veins ,less than half of nurses were longer working hours (>8 hrs)and prolonged standing beside patients bed. They were having a family history of varicose veins ⁽¹⁶⁾. These findings are similar to a study by Shangetha ⁽¹²⁾ who found that the majority of nurses are working shift duty without rest hours, sixteen of nurses only doing regular exercise and less than half of nurses have normal weight.

The present study shows that all students had poor level of knowledge about varicose vein before video assisted teaching program .While after video assisted teaching program the majority of students had good knowledge. there is an increase in the knowledge of the students after being exposed to the video assisted teaching program. The results show that there was a significant improvement in the post-test knowledge of the students. So , the video assisted teaching program was an effective teaching strategy to improve the knowledge of the students on varicose veins. The results are in the same line with Upendrababu ⁽¹⁷⁾ who found that there was a significant improvement in the knowledge level of staff nurses after the provision of information booklet. .Shangeetha ⁽¹²⁾ found that there was an increase in the level of knowledge of the nurses during post-test, producing a mean score of 26.80 ± 3.27 which is the majority of nurses had adequate knowledge which was achieved after the implementation of video assisted teaching program. Also the study is supported by a relative study conducted by Venisha Pearl Tauro ⁽⁹⁾ which shows that the knowledge on prevention and management of varicose veins among nurses shows improvement in post test. Jasline⁽¹⁸⁾ stated that before intervention majority of samples had inadequate knowledge. After giving video assisted teaching most of the students show adequate knowledge .

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 in increasing the knowledge of traffic police personnel on prevention of varicose veins⁽¹⁹⁾: Barnes (20) stated that the findings of the study showed that the knowledge scores of teachers regarding prevention and management of varicose veins were poor before the administration of Self Instructional Module (SIM). This SIM facilitated to improve knowledge regarding prevention and management of varicose veins. Post-test knowledge scores were significantly high in teachers. Hence, the SIM was an effective teaching strategy to improve the knowledge of the teachers on varicose veins. Also Jyoti (21) concluded that SIM on partograph administered to the 1st year P.B. BSc. Nursing students was effective in increasing the knowledge.

The findings of the study reveal that the mean scores of total knowledge about varicose vein before video assisted teaching program was 30.11 while after video assisted teaching program was 57.72. There was statistical significant difference between before and after video assisted teaching program regarding mean scores of total knowledge. This results are in line with Upendrababu⁽¹⁷⁾ found that the mean post test knowledge score regarding the knowledge of varicose vein and its prevention among staff nurses was 12.6 which is apparently higher than the mean pre test knowledge scores 8.73 and the mean difference was 3.87. This shows that information booklet is effective .Also the result is supporting by a pre-experimental study which is conducted by Rani ⁽²²⁾on Effectiveness of Structured teaching program on prevention of varicose veins among nurses at Kempegowda institute of medical sciences, hospital and research Centre,," This study showed that there was a significant increase in the knowledge level of staff nurses after the implementation of structured teaching program..Pradap⁽¹³⁾ who found that mean percentage of post-test knowledge score was higher than the mean percentage of pre-test knowledge score. The't' value computed between mean pre-test and post-test scores is statistically significant .This revealed that there was a significant difference between the mean pre-test and post-test knowledge scores on body mechanics among second year Basic B.Sc. nursing students. The study concluded that the second year Basic B.Sc. nursing students had less knowledge regarding body mechanics and the overall findings of the study indicated that there was an increase in the knowledge of samples following the administration of planned teaching program. This showed that planned teaching program was effective in improving the knowledge of second year Basic B. Sc. nursing students .Also Austin⁽²³⁾ found that there was highly significant increase in the knowledge of third year B.Sc nursing students regarding care of dementia patients. Hence, it is concluded that VATM is highly effective in improving the knowledge of the third year B.Sc nursing students.

The present study findings related to association between knowledge scores of nursing students and selected demographic variables, the findings demonstrated that there was no significant association between knowledge scores and selected demographic variables. It was interpreted that the knowledge scores regarding varicose vein were not influenced by the demographic variables. This results in the same line with Upendrababu⁽¹⁷⁾ who found that the selected demographic variables like age, sex, education, duration of work, total years of experience, areas of work, nothing has shown a association with the pretest knowledge score of samples. Pradap⁽¹³⁾ who found that there was no significant association between pre-test knowledge scores and selected demographic variables.

5. CONCLUSIONS

There was an increase in the knowledge level among first year nursing students about prevention and management of varicose veins following the video assisted teaching program. There was no significant association between knowledge scores and selected demographic variables.

6. RECOMMENDATIONS

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

1. Similar research should be conducted with a larger sample, at different levels of education, to generalize the findings.
2. An observational study can be done on practice of nursing students regarding the prevention and management of varicose veins
3. Continuous education for all nursing students will help to promote and update their knowledge on prevention and management of varicose veins
4. A similar study can be replicated with a control group.

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