
Effectiveness of an Educational Program on Operating Theater Nurses Knowledge about Prevention of Varicose Veins

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ABSTRACT

Background: The most prevalent vascular condition in humans, varicose veins of the lower extremities produces serious signs and symptoms in patients, necessitating surgical procedures, and causing significant morbidity and the nursing profession is seen as a high-risk occupation where prolonged standing and sitting are necessary job positions. Considering that nurses make up a large portion of the healthcare workforce, such demanding jobs might cause disruptions and raise the chance of developing varicose veins. **Objective:** The purpose of this study is to evaluate the effect of an educational program on operating room nurses' knowledge of varicose vein prevention. **Method:** a quasi-experimental design study was conducted from 11th September 2022 to 10th May 2023 at Al-Nasiriyah teaching hospital Questionnaire was filled out by 70 nurses who work in an operating theater chosen by non-probability (purposive) selection in order to gather data. **Result:** nurses in the study group are showing a poor level of knowledge during the pre-test time (71.4%, $M \pm SD = 4.86 \pm 3.549$), while they show a good level of knowledge during the post-test time (100%, $M \pm SD = 19.37 \pm 1.437$) that indicate the significant changes in their level of knowledge after applying the educational program. **Conclusion:** The high significant difference in the score of knowledge before and after the program can we conclude the program was an effective program to increase the awareness of nurses about the prevention of varicose veins

Keywords: varicose veins, operating theater, educational program, knowledge

Introduction

The most prevalent vascular condition in humans, varicose veins of the lower extremities produces serious signs and symptoms in patients, necessitating surgical procedures, and causing significant morbidity. A palpable subcutaneous vein is known as a varicose vein (VVs) it is often greater than 3mm, dilated, tortuous, and mostly found in lower limbs⁽¹⁾. Varicose veins may be the main factor contributing to patients' severe leg discomfort as well as other problems⁽²⁾. Varicose veins are incredibly common, which can be caused by inadequate vein valve function and a decline in the flexibility of the vein wall, which allows blood to build up in the veins and causes them to enlarge⁽³⁾. Multiple pregnancies, prolonged standing, and obesity are just a few of the conditions that make varicosity worse⁽⁴⁾. The According to the American Venous Forum, 23% of US adults have varicose veins, and being a nurse is considered a high-risk career. Where prolonged standing and sitting are necessary job positions. Considering that nurses make up a large portion of the healthcare workforce, such demanding jobs might cause disruptions and increase the risk of varicose veins. Despite the fact that varicose veins are generally safe, nurses should be aware of some underlying risks⁽⁵⁾ Varicose veins (VVs) in the lower limbs are known to affect between 10% and 30% of people globally. One of the most important aspects of varicose veins is prevention. Self-care is one method for preventing varicose veins⁽¹⁾

The group of hospital nurses who work in operating rooms is regarded as high-risk. Nurses who work in operating rooms are subject to problems with the musculoskeletal system could be caused by a number of risk factors. One of these factors is Static posture, which includes activities like prolonged standing with the trunk and neck flexed, holding tools and heavy objects, pulling/pushing heavy equipment, and using patient trolleys, is one of the contributing causes. Taking preventative actions is the only way to avoid VV in nurses. The only method to avoid VV in nurses is to take preventative measures⁽⁶⁾. Operating rooms (ORs) differ from other work settings. Operating room nurses' health may suffer because of the systems, long hours, and stressful environment. The OR environment, among other healthcare environments, is very significant in the hospital. Because of the nature of surgeries, nurses' work in the operating room has a fast-paced, highly demanding, and fluctuating nature⁽⁷⁾

According to a study by Bhagya Seela, among the straightforward precautions for preventing varicose veins among hospitalized patients include elevating the feet, wearing elastic compression stockings, performing foot flexion exercises, and participating in regular physical activity. The outcomes of the study have been excellent. The condition of the patient has improved since the treatment. Numerous other studies have made this fairly clear, staff nurses have a very large knowledge gap when it comes to the prevention of

varicose veins. Nurses have a very high risk of injury because they are frequently on their feet.⁽⁸⁾

In order to maintain or improve human work at the domestic level of effectiveness, nursing is defined as "the act of providing and managing one's own care while providing assistance to others."⁽⁹⁾ Nursing staff may be fatigued both physically and mentally as a result of the health dangers and pressure of the demanding job brought on by such public health incidents⁽¹⁰⁾.

The capacity for self-reflection, symbolism, and interpersonal contact are all components of human health, which is a state that comprises both the well-being of individuals and groups.⁽¹¹⁾ It focuses on a person's capacity to

engage in specific activities in order to develop habits that are supportive to health⁽¹²⁾.

Promoting higher education levels is one of the main measures. Improved nursing care can result from nurse education that is carried out and organized in accordance with the requirements of nurses and moral values⁽¹³⁾. The key to ensuring that students succeed in the classroom is to use effective teaching methods⁽¹⁴⁾. The primary symptom that drives patients to a medical facility is pain⁽¹⁵⁾. Lack of information on the illness' occurrence, prevalence, etiology, treatment, and preventative techniques among the general public contributes to a knowledge gap regarding awareness and the implementation of preventive behavior⁽¹⁶⁾.

Materials and Methods

Sources of data

It has been executed in the operating theater at AL-Nasiriyah Teaching Hospital, Al-Nasiriyah city, Iraq to evaluate the effect of an educational program on operating room nurses' knowledge of varicose vein prevention

Study design: Quasi experimental study design

Study sample size: 70

Study duration: the time frame from 11 September 2022 to 14th may 2023.

Place of sample collection: In Dhi Qar Governorate, In in the operating theater at AL-Nasiriyah Teaching Hospital, Al-Nasiriyah city, Iraq

Methodology

A quasi-experimental design was used in the present study with the application of a pre/ post-test approach for the study group and control group. The study has been conducted at Operating Theater AL-Nasiriyah Teaching Hospital Thi-Qar health directorate the period of the study was from 11 September 2022 to 10 May 2023. (70) nurses agreed to participate in the program, (35)study group, and (35)control group. The Statistical Package for Social Sciences (SPSS) application, version 26.0, was used to analyze and interpret the data. The educational program design was based on the results of preliminary assessment and on information gained from reviewing the relative scientific literature. The content validity of the study instrument and the program was determined by the panel of (14) experts who have more than 5 years of experience in their field.

Results:

Table (1)
Nursing Staff Distribution Based on Socio-demographic Variables

No.	Characteristics	Study group		Control group		
		f	%	f	%	
1	Age (year)	23 – 27	16	45.7	8	22.8
		28 – 32	15	42.8	17	48.6
		33 – 37	3	8.6	5	14.3
		38_42	1	2.9	5	14.3
		Total	35	100	35	100
		Mean ± SD	28.5 ± 3		31 ± 4	
2	Gender	Male	12	34.3	18	51.4
		Female	23	65.7	17	48.6
		Total	35	100	35	100

3	Marital status	Married	15	42.9	17	48.6
		Single	20	57.1	18	51.4
		Widowed/er	0	0	0	0
		Divorced	0	0	0	0
		Separated	0	0	0	0
		Total	35	100	35	100

No: Number, f: Frequency, %: Percentage, SD: Standard deviation

The descriptive analysis in table 1 shows that average age for nurses in the study group is 28.5 ± 3 years in which 45.7% of them seen with age group of “23- 27” year. The average age for nurses in the control group refers to 31 ± 4 years and 48.6% of them are seen with age group of “28- 32” years. Regarding

gender, 65.7% of nurses in the study group are females while 51.4% of nurses in the control group are males. The marital status refers that more than half of nurses are still unmarried as reported among 57.1% in the study group and 51.4% in the control group

**Table (2):
Nursing Staff Distribution based on Occupational Variables**

No.	Characteristics	Study group		Control group		
		f	%	f	%	
1	Years of experince in the operating theater	One	15	42.9	18	51.4
		Four	20	57.1	17	48.6
		Total	35	100	35	100
		Mean ± SD	1.6 ± 0.5		1.5 ± 0.5	
2	Working hours per day	6 hours	21	60	20	57.1
		8 hours	14	40	15	42.9
		Total	35	100	35	100

No: Number, f: Frequency, %: Percentage, SD: Standard deviation

The years of experince in operating theater refers to “four” years among 57.1% of nurses in the study group with average of 1.6 ± 0.5 years, and also reported among 48.6% of nurses in

the control group with average of 1.5 ± 0.5 years. Regarding working hours per day, the nurses working for 6 hours per day as reported by 60% in the study group and 57.1% in the control group who worked the day shift.

**Table (3):
Effectiveness of an Educational Program on Nurses 'Knowledge about Prevention of varicose vein in Operating Theater among Study and Control Group**

Knowledge	Study Group (N=35)						Control Group (N=35)					
	M.	SD	t	df	p-value	Sig.	M.	SD	t	df	p-value	Sig.

Pre-test	4.86	3.549	28.222	34	.001	H.S	5.69	2.506	.315	34	.754	N.S
Post-test	19.37	1.437					5.83	1.654				

M: Mean, t: t-test, df: Degree of freedom, p: Probability, Sig.: Significance, HS: High Significant, N.S: Not Significant

This table exhibits findings reveal that nurses in the study group are showing poor level of knowledge during the pre-test time (71.4%, $M \pm SD = 4.86 \pm 3.549$), while they show good level of knowledge during the post-test time (100%, $M \pm SD = 19.37 \pm 1.437$) that indicate the significant changes in their level of knowledge after applying educational program. The nurses in the control group show poor level of knowledge during the pre-test time (71.4%, $M \pm SD = 5.69 \pm 2.506$) and post-test time (71.4%, $M \pm SD = 5.83 \pm 1.654$) that indicate no

significant change in level of knowledge. high significant differences in nurses' knowledge with regard to post-test time among the study group at $p\text{-value} = 0.001$, that clarify the improvement in nurses' knowledge among study group during the post time as indicated by increasing mean score for overall knowledge, while there is no significant differences in nurses' knowledge among study and control group during the pre-test time

Discussion

The result shows the mean of age 28.5 ± 3 ranged from (23-27) years in the study group. This outcome lines up with a descriptive survey to gauge staff nurses' awareness of varicose vein risk factors and prevention options. The researchers found that in most age groups 40% of the participant age ranged from (26_31) years⁽¹⁷⁾.

More than half of the participants were female. The percentage of females was 65.7% in the study group. This result is supported by a study done to evaluate the impact of a video-assisted teaching program on first-year students' understanding of varicose vein prevention and management. Show that 66.70% of the nurses that participated in the study were female⁽¹⁾. In contrast, descriptive research was undertaken at Al-Diwaniya Teaching Hospital, to assess the aseptic technique practices of the nursing personnel in the operation room. Their finding revealed that (66.7%) of the nursing staff who participated in the study are male⁽¹⁸⁾. The marital status, 57.1 percent of nurses who participated in the study were unmarried. This outcome is in line with a Pre-experimental design study conducted to assess how well a video-assisted teaching program improves students' understanding of varicose vein treatment and prevention. The result displays the vast majority of the study samples (44n) 88% were unmarried⁽¹⁹⁾

Regarding the year of experience in the operating theater, 57.1% of the study group's nurses indicate that they have

"four" years of experience working in the operating theater. This result is consistent with a study conducted to assess the impact of structured teaching programs on OT and ICU nurses' knowledge of varicose veins and how to prevent them. their finding show 33.33% of the nurse have 0-5 years of experience⁽²⁰⁾.

In terms of work hours, 60% of the study group and 57.1 of the control group nurses reported working 6 hours every day In contrast study, a cross-sectional research design was used among registered nursing staff working in operation rooms of the selected hospitals to assess the knowledge and practices on risk factors and prevention of varicose veins. The outcome of the study shows that 66% of nurses who participated in the study had 12 hours of duty per day⁽⁶⁾.

Table (3) exhibits that educational program is highly effective on nurses' knowledge in the study group with a great significant difference, which suggests with regard to post-test at $p\text{-value} = 0.001$. Similar findings in a Pre-experimental design study conducted to evaluate the efficiency of a structured education program on the understanding of varicose vein prevention and management their finding show the level of significance that the planned training approach is successful in enhancing schoolteachers' understanding of varicose vein care and prevention⁽²¹⁾.

Conclusion

The high significant difference in the score of knowledge before and after the program can we conclude the program

was an effective program to increase the awareness of nurses about the prevention of varicose veins

Recommendation

The high prevalence of VV in the general population and specifically among jobs that required prolonged stand in which nurse is one of them. This study suggested that health

education initiatives be undertaken to raise nurses' understanding of varicose vein prevention and its implications.

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