

A study to assess the effectiveness of structured teaching programme on knowledge regarding deep vein thrombosis among nursing students at SGT university Gurugram, Haryana

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ABSTRACT

Deep vein thrombosis is a serious yet largely preventable vascular disorder that continues to contribute significantly to hospital acquired morbidity and mortality worldwide. The present study aimed to assess the effectiveness of structured teaching programme on knowledge regarding deep vein thrombosis among nursing students at SGT university Gurugram, Haryana. A Quantitative Research approach was adopted, and a total of 180 nursing students were selected using a convenience sampling technique. Data was collected using a structured questionnaire, and was administered using Google forms.

The findings revealed that the pre-test knowledge assessment was 76 (42.2%) students had adequate knowledge regarding Deep Vein Thrombosis. About 64 (35.6%) students had moderately adequate knowledge, while 40 (22.2%) demonstrates inadequate knowledge, whereas, in post-test majority of respondents 140 (77.8%) had adequate knowledge. To add on, the mean pre-test knowledge score was 18.62 ± 8.02 , while the mean post-test knowledge score increased to 24.39 ± 5.29 . The mean difference between the score was 5.77.

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INTRODUCTION

The term deep vein thrombosis is derived from three distinct components that together describe the pathology precisely. The word “deep” refers to the deep venous system of the body, particularly the large veins situated between muscle compartments such as the femoral, popliteal, and iliac veins, which are responsible for returning deoxygenated blood from the lower extremities back to the heart. The word “vein” denotes the blood vessel carrying blood toward the heart. “Thrombosis” originates from the Greek word *thrombos*, meaning a clot or lump, combined with the suffix *-osis*, indicating a pathological condition. Thus, deep vein thrombosis literally signifies the formation of a blood clot within a deep vein. Medically, deep vein thrombosis is defined as the formation of a thrombus within the deep venous circulation, most commonly in the lower limbs, resulting in partial or complete obstruction of venous blood flow and carrying the risk of embolization to the pulmonary arteries, leading to pulmonary embolism. It is one component of the broader clinical spectrum known as venous thromboembolism.

Objectives of the Study:

To assess the pre-test level of knowledge regarding deep vein thrombosis among BSc. Nursing students.

To assess the post-test level of knowledge regarding deep vein thrombosis among BSc. Nursing students after the structured teaching programme.

To compare the pre-test and post-test knowledge scores of BSc. Nursing students regarding deep vein thrombosis.

To determine the effectiveness of the structured teaching programme on knowledge regarding deep vein thrombosis among BSc. Nursing students.

To find the association of knowledge score of BSc. Nursing students regarding deep vein thrombosis with their selected demographic variables.

Methodology:

A quantitative research approach was adopted for the present study to systematically evaluate the effectiveness of a structured teaching programme on knowledge regarding deep vein thrombosis among nursing students. The study was conducted at SGT University, Gurugram, Haryana, among undergraduate students enrolled in the nursing department. The target population comprised B.Sc. Nursing students, from which a sample of 180 participants was selected for the main study using a convenience sampling technique. In addition to the main study, a pilot study was conducted among 20 nursing students to assess the feasibility, clarity, and reliability of the data collection tools and study procedure. The results of the pilot study indicated

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that the tools were appropriate and could be used for the main study; however, the pilot participants were excluded from the final analysis to maintain methodological rigor. Data were collected using a structured approach that included a socio-demographic questionnaire to obtain baseline characteristics of the participants and a structured knowledge questionnaire to assess their level of knowledge regarding deep vein thrombosis. The data collection process was carried out in a systematic manner to ensure consistency and accuracy of responses.

Results:

Socio-Demographic Characteristics

The study included 180 students, with the majority (50%) belonging to the 19–20 years age group. Male students constituted 40%, while females accounted for

60%, indicating a nearly equal distribution. Most of the participants were from urban area (45.6%), whereas, rest of the participants were from rural area (32.2%), and semi-urban area (22.2%). The participants were from BSc. Nursing. The overall proportion of students were from the fourth semester (100%). About 38.9% of students obtained 60-70% in their previous semester. 24.4% obtained 70-80%, 21.1% obtained 50-60%, and 15.6% obtained above 80%. 35.6% participants have attended workshop/seminar/lecture on DVT in which 64.4% have not attended any workshop/seminar/lecture. Out of these 43.8% attended workshop, 31.2% attended seminar, and 25.0% attended lecture.

Table 1: Frequency and Percentage Distribution of Demographic Variables (N: 180)

S. No	Variable	Category	Frequency (f)	Percentage (%)
1	Age	16–18 years	55	30.6%
		19–21 years	90	50.0%
		Above 22 years	35	19.4%
2	Gender	Male	72	40.0%
		Female	108	60.0%
		Other	0	0%
3	Residence	Urban	82	45.6%
		Rural	58	32.2%
		Semi-urban	40	22.2%
4	Course	B.Sc Nursing	180	100%
		GNM	0	0%
		Post Basic B.Sc Nursing	0	0%
5	Semester	4th Semester	180	100%
6	Marks (Previous Semester)	Below 50%	0	0%
		50–60%	38	21.1%
		60–70%	70	38.9%
		70–80%	44	24.4%
		Above 80%	28	15.6%
7	Attended Workshop/Seminar/Lecture on DVT	Yes	64	35.6%
		No	116	64.4%
8	If Yes (n = 64)	Workshop	28	43.8%
		Seminar	20	31.2%
		Lecture	16	25.0%
9	Observed Patient with DVT	Yes	74	41%
		No	106	59%
10	Family History of DVT	Yes	25	13.9%
		No	155	86.1%

Table 2: Distribution of Pre-test Knowledge Score (N: 180)

Level of Knowledge	Score Range	Frequency (f)	Percentage (%)
Inadequate Knowledge	0–10	40	22.2%
Moderately Adequate Knowledge	11–20	64	35.6%
Adequate Knowledge	21–30	76	42.2%
Total		180	100%

Table 3: Distribution of Post-test Knowledge Scores (N: 180)

Level of Knowledge	Score Range	Frequency (f)	Percentage (%)
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Inadequate Knowledge	0–10	2	1.1%
Moderately Adequate Knowledge	11–20	38	21.1%
Adequate Knowledge	21–30	140	77.8%
Total		180	100%

Table 4: Comparison of Pre-test and Post-test Knowledge Scores (N: 180)

Test	Mean	Standard Deviation	Mean Difference	t-value	df	p-value
Pre-test	18.62	8.02				
Post-test	24.39	5.29	5.77	7.92	179	<0.001*

The mean pre-test knowledge score was 18.62 ± 8.02 , while the mean post-test knowledge score increased to 24.39 ± 5.29 . The mean difference between the scores was 5.77. The calculated paired t-value was 7.92 with $df = 179$, which was statistically significant at $p < 0.001$ level.

Table 5: Association between Pre-test Level of Knowledge and Selected Demographic Variables (N: 180)

S.No	Variable	Category	Inadequate	Moderate	Adequate	Total	χ^2	df	p-value
1	Age	16–18 yrs	0	11	9	20	9.07	4	>0.05
		19–21 yrs	35	47	63	145			
		Above 22 yrs	5	6	4	15			
		Total	40	64	76	180			
2	Gender	Male	14	23	19	56	2.30	2	>0.05
		Female	26	41	57	124			
		Total	40	64	76	180			
3	Residence	Urban	20	36	52	108	8.31	4	>0.05
		Rural	17	17	16	50			
		Semi-urban	3	11	8	22			
		Total	40	64	76	180			
4	Marks	Below 50%	4	3	0	7	9.66	8	>0.05
		50–60%	7	9	9	25			
		60–70%	11	18	21	50			
		70–80%	15	24	33	72			
		Above 80%	3	10	13	26			
Total	40	64	76	180					
5	Attended DVT Programme	Yes	27	35	44	106	1.72	2	>0.05
		No	13	29	32	74			
		Total	40	64	76	180			
6	Type of Programme	Workshop	11	10	10	31	9.75	4	<0.05*
		Seminar	12	9	7	28			
		Lecture	11	23	33	67			
		Total	34	42	50	126			
7	Observed DVT Patient	Yes	21	21	31	73	3.96	2	>0.05
		No	19	43	45	107			
		Total	40	64	76	180			
8	Family History	Yes	12	3	15	30	12.24	2	<0.05*
		No	28	61	61	150			
		Total	40	64	76	180			

Table 6: Association between Post-test Knowledge and Selected Demographic Variables (N: 180)

S.No	Variable	Category	Inadequate	Moderate	Adequate	Total	χ^2	df	p-value
1	Age	16–18 yrs	0	11	9	20	9.08	4	>0.05
		19–21 yrs	35	47	63	145			
		Above 22 yrs	5	6	4	15			
		Total	40	64	76	180			
2	Gender	Male	14	23	19	56	2.30	2	>0.05
		Female	26	41	57	124			
		Total	40	64	76	180			
3	Residence	Urban	20	36	52	108	8.31	4	>0.05
		Rural	17	17	16	50			
		Semi-urban	3	11	8	22			
		Total	40	64	76	180			
4	Marks	Below 50%	4	3	0	7	9.66	8	>0.05
		50–60%	7	9	9	25			
		60–70%	11	18	21	50			
		70–80%	15	24	33	72			
		Above 80%	3	10	13	26			
		Total	40	64	76	180			
5	Attended Programme	DVT Yes	27	35	44	106	1.72	2	>0.05
		DVT No	13	29	32	74			
		Total	40	64	76	180			
6	Observed Patient	DVT Yes	21	21	31	73	3.96	2	>0.05
		DVT No	19	43	45	107			
		Total	40	64	76	180			
7	Family History	Yes	12	3	15	30	12.24	2	<0.05*
		No	28	61	61	150			
		Total	40	64	76	180			

Discussion:

The findings of the present study demonstrated a notable improvement in the knowledge levels of nursing students following the structured teaching programme. In the pre-test, the majority of participants exhibited moderately adequate knowledge, which significantly improved to adequate knowledge in the post-test. This indicates that the educational intervention was effective in enhancing students’ understanding of deep vein thrombosis. The statistically significant increase in mean knowledge scores further supports the effectiveness of the structured teaching programme.

The study also identified a significant association between pre-test knowledge scores and selected demographic variables, including academic performance, prior exposure to deep vein thrombosis-related programmes, and clinical observation of patients. These findings suggest that baseline knowledge may be influenced by prior academic and clinical experiences. However, no significant association was observed between post-test knowledge scores and demographic variables, indicating that the structured teaching programme was equally effective across different groups of students, regardless of their background characteristics.

Overall, the results highlight the importance of structured educational interventions in improving knowledge among nursing students and emphasize the need for incorporating

such programmes into nursing education to strengthen clinical competence and promote better patient care outcomes.

Conclusion:

The study findings revealed that the structured teaching programme was effective in enhancing the knowledge of B.Sc. Nursing students regarding Deep Vein Thrombosis. A significant improvement was observed in the post-test scores compared to the pre-test, indicating that planned educational interventions play a crucial role in improving students’ knowledge.

Recommendations:

A similar study can be conducted with a larger sample size in different settings to enhance generalizability.

A comparative study can be carried out to evaluate the effectiveness of structured teaching programmes with other teaching methods.

Experimental studies including a control group can be undertaken to obtain more robust findings.

Further research can be conducted to assess the impact of structured teaching programmes on clinical practice related to Deep Vein Thrombosis.

Long-term follow-up studies can be done to evaluate the retention of knowledge over time.

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