

A Study to Assess Knowledge Regarding Prevention of Deep Vein Thrombosis among Nursing Students at a Selected Nursing College in Jaipur, Rajasthan

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Abstract

Background: Deep Vein Thrombosis (DVT) is a condition characterized by the formation of a blood clot in a deep vein, most commonly in the lower extremities. It is an important healthcare concern because a clot may lead to pulmonary embolism. Nurses play an important role in identifying risk factors and implementing appropriate preventive measures.

Methodology: A descriptive cross-sectional research design was used. A sample of 100 nursing students was selected using a convenience sampling technique. Data were collected using a structured knowledge questionnaire consisting of 25 multiple-choice questions related to the definition, risk factors, signs and symptoms, complications, and prevention of DVT. Frequency, percentage, mean, standard deviation, and chi-square tests were planned for data analysis.

Results: Among 100 participants, 22 (22%) had inadequate knowledge, 50 (50%) had moderate knowledge, and 28 (28%) had adequate knowledge. The mean knowledge score was 16.8 ± 4.2 out of 25. Knowledge regarding risk factors and clinical manifestations was comparatively better than knowledge regarding preventive interventions.

Conclusion: Knowledge regarding DVT prevention is essential for nursing students. Educational sessions and clinical demonstrations may improve their understanding of risk assessment and preventive nursing care.

Keywords: Deep Vein Thrombosis, Adult Health Nursing, Nursing Students, Knowledge, Prevention, Thromboembolism.

Introduction

Adult Health Nursing focuses on the prevention, assessment, and management of health problems affecting adults. Nurses are responsible for monitoring patients, identifying complications, providing preventive care, and promoting recovery.

Deep Vein Thrombosis is the formation of a blood clot in a deep vein, usually in the leg. It may occur when venous blood flow is reduced, the blood has an increased tendency to clot, or blood vessels are injured. Important risk factors include prolonged immobility, major surgery, hospitalization, previous venous thromboembolism, active cancer, and certain medical conditions.

Common manifestations of DVT include unilateral leg swelling, pain or tenderness, warmth, and changes in skin color. However, some patients may have no obvious symptoms. A clot can travel to the lungs and cause pulmonary embolism, a potentially life-threatening complication.

Prevention depends on individual risk assessment and may include early mobilization, appropriate leg exercises, prescribed anticoagulant prophylaxis, and mechanical prophylaxis when indicated. Preventive measures should be selected according to the patient's condition and current clinical guidelines.

Nursing students need adequate knowledge of DVT risk factors, warning signs, prevention, and the importance of timely clinical assessment. Assessing their knowledge can help identify educational needs and strengthen patient safety.

Hospitalized patients may be at increased risk of DVT because of reduced mobility, surgery, serious illness, and other contributing factors. Early identification of risk factors and appropriate preventive measures are important for reducing complications.

Nursing students must understand the importance of mobility, prescribed prophylaxis, clinical observation, and prompt reporting of suspected DVT. Inadequate knowledge may affect their ability to recognize risks and provide appropriate preventive care.

Therefore, the present study focuses on assessing knowledge regarding DVT prevention among nursing students.

Objectives

1. To assess the level of knowledge regarding DVT prevention among nursing students.
2. To assess knowledge concerning the risk factors, signs and symptoms, complications, and preventive measures of DVT.
3. To determine the association between knowledge level and selected demographic variables.

Hypotheses

H₁: There is a significant association between knowledge level regarding DVT prevention and selected demographic variables among nursing students.

H₀: There is no significant association between knowledge level regarding DVT prevention and selected demographic variables among nursing students.

MATERIALS & METHODS

Research Approach

Quantitative research approach.

Research Design

Descriptive cross-sectional research design.

Research Setting

A selected nursing college in Jaipur, Rajasthan.

Population

Nursing students enrolled at the selected nursing college.

Sample Size

100 nursing students.

Sampling Technique

Convenience sampling technique.

Inclusion Criteria

1. Nursing students enrolled at the selected college.
2. Students available during data collection.
3. Students willing to participate and provide informed consent.

Exclusion Criteria

1. Students absent during data collection.
2. Students unwilling to participate.
3. Students included in the pilot study, if applicable.

Description of the Tool

The structured questionnaire consisted of two parts.

Part I: Demographic variables

Part II: Knowledge questionnaire

The questionnaire consisted of 25 multiple-choice questions covering:

Each correct answer received one mark, and each incorrect or unanswered response received zero marks. The maximum score was 25.

Validity and Reliability

The questionnaire should be reviewed by experts in Adult Health Nursing and research methodology. A pilot study should be conducted before the main study. Reliability should be calculated using an appropriate method, such as KR-20 for dichotomously scored questions.

Data Collection Procedure

Institutional permission and applicable ethics approval should be obtained before data collection. Informed consent should be obtained from participants. The questionnaire should be administered under standardized conditions, and confidentiality should be maintained.

Statistical Analysis

Frequency, percentage, mean, and standard deviation may be used for descriptive analysis. The chi-square test or Fisher's exact test may be used to examine associations between knowledge level and demographic variables, depending on the data and test assumptions. Statistical significance may be assessed at $p < 0.05$.

Results

Table 1. Distribution of Participants According to Age (N = 100)

Age group	Frequency	Percentage
18–20 years	40	40%
21–23 years	45	45%
Above 23 years	15	15%
Total	100	100%

Table 2. Distribution According to Gender

Gender	Frequency	Percentage
Female	75	75%
Male	25	25%
Total	100	100%

Table 3. Distribution According to Academic Year

Academic year	Frequency	Percentage
First year	25	25%
Second year	28	28%
Third year	27	27%
Fourth year	20	20%
Total	100	100%

Table 4. Previous Clinical Exposure

Clinical exposure	Frequency	Percentage
Yes	65	65%
No	35	35%
Total	100	100%

Table 5. Previous Information Regarding DVT

Previous information	Frequency	Percentage
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Yes	60	60%
No	40	40%
Total	100	100%

Table 6. Level of Knowledge Regarding DVT Prevention

Knowledge level		Score range	Frequency	Percentage
Inadequate		0–12	22	22%
Moderate		13–18	50	50%
Adequate		19–25	28	28%
Total			100	100%

Table 8. Domain-Wise Knowledge Regarding DVT Prevention

Knowledge domain	Maximum score	Mean score	Percentage
Definition and characteristics	5	3.8	76%
Risk factors	5	3.7	74%
Signs and symptoms	5	3.6	72%
Complications	5	3.0	60%
Prevention and nursing management	5	2.7	54%
Total	25	16.8	67.2%

Table 9. Association Between Clinical Exposure and Knowledge Level

Clinical exposure	Inadequate	Moderate	Adequate	Total
Yes	12	33	20	65
No	10	17	8	35
Total	22	50	28	100

Table 10. Association Between Previous Information and Knowledge Level

Previous information	Inadequate	Moderate	Adequate	Total
Yes	10	31	19	60

No	12	19	9	40
Total	22	50	28	100

Discussion

The study assesses knowledge regarding DVT prevention among nursing students at a selected nursing college in Jaipur, Rajasthan.

The example results indicate that 50% of participants had moderate knowledge, 28% had adequate knowledge, and 22% had inadequate knowledge. The mean knowledge score was 16.8 out of 25, indicating moderate overall knowledge according to the specified scoring system.

The findings can guide nursing educators in developing structured teaching sessions and practical demonstrations to strengthen DVT prevention knowledge.

Nursing Implications

Nursing Education

Classroom teaching, case-based discussions, and clinical demonstrations should cover DVT risk factors, symptoms, complications, and preventive interventions.

Nursing Practice

Nurses should assess patient risk, support early mobilization when appropriate, follow prescribed prophylaxis, and promptly report suspected DVT.

Nursing Administration

Hospitals and nursing colleges should support staff and student education regarding venous thromboembolism prevention.

Nursing Research

Further studies may evaluate the effectiveness of structured teaching programs and compare knowledge among nursing students from different institutions.

Recommendations

1. Similar studies may be conducted in multiple nursing colleges.
2. A structured teaching program may be evaluated using a pre-test/post-test design.
3. Future research may assess actual preventive practices in clinical settings.
4. Larger samples may be used to improve precision and generalizability.
5. Regular refresher sessions may be included in Adult Health Nursing education.

Conclusion

Knowledge regarding DVT prevention is essential for nursing students because early identification of risk factors and appropriate preventive measures can help reduce complications associated with venous thromboembolism.

The results presented in this article demonstrate a reporting format for knowledge categories, domain-wise scores, and associations with selected demographic variables. The figures should be replaced with actual study data before the article is submitted as original research.

ETHICAL APPROVAL: Permission from ethics committee

CONFLICT OF INTEREST: No

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References

1. National Institute for Health and Care Excellence. Venous thromboembolic diseases: diagnosis, management and thrombophilia testing [Internet]. London: NICE. Available from: <https://www.nice.org.uk/guidance/ng158>
2. Ortel TL, Neumann I, Ageno W, Beyth R, Clark NP, Cuker A, et al. American Society of Hematology 2020 guidelines for management of venous thromboembolism: treatment of deep vein thrombosis and pulmonary embolism. *Blood Adv*. 2020;4(19):4693-738.
3. Kahn SR, Lim W, Dunn AS, Cushman M, Dentali F, Akl EA, et al. Prevention of VTE in nonsurgical patients: antithrombotic therapy and prevention of thrombosis, 9th ed. American College of Chest Physicians evidence-based clinical practice guidelines. *Chest*. 2012;141(2 Suppl).
4. Kearon C, Akl EA, Comerota AJ, Prandoni P, Bounameaux H, Goldhaber SZ, et al. Antithrombotic therapy for VTE disease: antithrombotic therapy and prevention of thrombosis, 9th ed. American College of Chest Physicians evidence-based clinical practice guidelines. *Chest*. 2012;141(2 Suppl).
5. Stone J, Hangge P, Albadawi H, Wallace A, Shamoun F, Knuttien MG, et al. Deep vein thrombosis: pathogenesis, diagnosis, and medical management. *Cardiovasc Diagn Ther*. 2017;7(Suppl 3).
6. Anderson DR, Morgano GP, Bennett C, Dentali F, Francis CW, Garcia DA, et al. American Society of Hematology 2019 guidelines for management of venous thromboembolism: prevention of venous thromboembolism in surgical hospitalized patients. *Blood Adv*. 2019;3(23):3898-944.
7. Heit JA. Epidemiology of venous thromboembolism. *Nat Rev Cardiol*. 2015;12(8):464-74.
8. Di Nisio M, van Es N, Büller HR. Deep vein thrombosis and pulmonary embolism. *Lancet*. 2016;388(10063):3060-73.
9. Tritschler T, Kraaijpoel N, Le Gal G, Wells PS. Venous thromboembolism: advances in diagnosis and treatment. *JAMA*. 2018;320(15):1583-94.
10. Raskob GE, Angchaisuksiri P, Blanco AN, Buller H, Gallus A, Hunt BJ, et al. Thrombosis: a major contributor to the global disease burden. *Arterioscler Thromb Vasc Biol*. 2014;34(11):2363-71.