e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

"A STUDY ON KNOWLEDGE RELATED TO PHLEBITIS & THROMBOSIS IN NURSING STAFFS OF PARUL SEVASHRAM HOSPITAL"

Aditya Kumar*1, Pankaj Kumar Sharma*2, Dr. Bharat Patil*3

*1,2MBA Student, Parul Institute of Management & Research (Parul University), India.

*3Assistant Professor, Faculty of Management Studies (Parul University),), India.

2306172000163@paruluniversity.ac.in, 2306172000380@paruluniversity.ac.in,
bharat.patil28581@paruluniversity.ac.in

DOI : https://www.doi.org/10.56726/IRJMETS70230

ABSTRACT

Intravenous (IV) therapy frequently results in thrombosis and phlebitis, which pose serious concerns to patient safety. In order to prevent, diagnose, and treat these illnesses, nursing professionals are essential. The purpose of this study is to evaluate the nursing staff's understanding of thrombosis and phlebitis at Parul Sevashram Hospital, pinpoint knowledge gaps, and suggest methods to improve patient care.136 nursing staff members were given a structured questionnaire as part of a descriptive cross-sectional study design. Awareness of risk factors, symptoms, prevention, and management of problems associated to intravenous therapy was evaluated by the survey. Descriptive and inferential statistics, such as t-tests and Chi-square tests, were used in the data analysis process to identify knowledge differences according to training and experience.The results showed that although the majority of nurses showed a high level of understanding regarding the symptoms of thrombosis and phlebitis, there were still certain knowledge gaps, especially when it came to determining risk factors and the best preventative measures. The study emphasizes the necessity of focused training initiatives to enhance IV treatment administration.Structured questionnaires were used to gather data from 136 nursing staff members as part of a descriptive cross-sectional study design. The study examined knowledge of symptoms, risk factors, therapeutic interventions, and preventative strategies pertaining to problems from IV therapy. The results show that although the majority of nurses showed a good grasp of thrombosis and phlebitis, there are still some knowledge gaps, especially when it comes to identifying early warning symptoms, discriminating between different types of phlebitis, and applying infection control best practices.

In order to improve nursing competency in IV treatment management, the study emphasizes the necessity of improved training programs and ongoing education. Healthcare facilities can increase patient safety, lower problems, and improve the general standard of care when administering IV treatment by filling in these knowledge gaps.

Keywords: Deep vein thrombosis (DVT), hospital-acquired complications, thrombosis, phlebitis, intravenous (IV) therapy, nursing knowledge, patient safety, infection control, clinical practice, prevention strategies, and healthcare management.

I. INTRODUCTION

Significant side effects of intravenous (IV) therapy include thrombosis and phlebitis, which pose major concerns to patient safety and medical results. While thrombosis includes the production of blood clots and can result in serious consequences including deep vein thrombosis (DVT) or pulmonary embolism, phlebitis is defined by inflammation of the vein and can cause pain, redness, and swelling. Ineffective management of these disorders might raise patient morbidity, hospital stays, and medical expenses.

Through appropriate IV insertion techniques, infection control measures, and early symptom assessment, nursing personnel play a crucial role in preventing, diagnosing, and managing thrombosis and phlebitis. Higher rates of IV-related problems, however, may result from ignorance and a failure to follow recommended procedures. Improving patient care standards requires an understanding of nurses' familiarity and proficiency with IV treatment.

The purpose of this study is to evaluate the nursing staff's understanding of thrombosis and phlebitis at Parul Sevashram Hospital in order to detect any knowledge gaps that can compromise patient safety. The study will

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

assess existing clinical practices and awareness levels to identify areas that require improvement, which will ultimately aid in the creation of focused training initiatives. IV-related problems can be considerably decreased by improving infection control procedures and nurse education, which will improve the standard of care overall.

1.1 Background:

An essential part of contemporary healthcare is intravenous (IV) therapy, which is frequently used to deliver drugs, fluids, and nutrition. But regular use is linked to problems like thrombosis and phlebitis, which can seriously affect treatment results and patient safety. Redness, swelling, discomfort, and warmth at the IV site are some of the signs of phlebitis, an inflammation of the vein that is frequently brought on by mechanical irritation, chemical exposure, or bacterial infections. A more significant concern is thrombosis, which is the development of blood clots in veins. If left untreated, thrombosis can lead to pulmonary embolism or deep vein thrombosis (DVT), both of which can be fatal.

At the forefront of IV therapy management, nursing professionals are essential in preventing and spotting these issues. Adherence to infection control procedures, early symptom diagnosis, and appropriate IV insertion technique expertise are necessary for providing patients with effective care. Studies have revealed differences in nursing practice and knowledge despite set recommendations, which can result in avoidable IV-related problems.

The purpose of this study is to assess the nursing staff's understanding of thrombosis and phlebitis at Parul Sevashram Hospital. The research will help to improve training programs, improve patient safety, and lower hospital-acquired problems associated to IV therapy by identifying gaps in clinical practices and awareness.

1.2 Problem Statement:

Significant side effects from intravenous (IV) therapy include thrombosis and phlebitis, which can result in poor patient outcomes, extended hospital stays, and higher medical expenses. Nursing staff at Parul Sevashram Hospital lack thorough knowledge of and commitment to evidence-based practices, despite the vital role they play in avoiding and managing these problems.

The increased risk of thrombosis and phlebitis in individuals undergoing IV treatment could be attributed to this information gap. Thus, the purpose of this study is to evaluate nursing staff members' knowledge of phlebitis and thrombosis, pinpoint any knowledge gaps, and offer suggestions for strengthening training and advancing patient care procedures.

II. OBJECTIVES OF THE STUDY

This study aims to assess the knowledge of nursing staff at Parul Sevashram Hospital regarding phlebitis and thrombosis in IV therapy. The objectives are:

- To evaluate the awareness and understanding of nursing staff about the causes, symptoms, and prevention of phlebitis and thrombosis.
- To identify gaps in knowledge and clinical practices related to IV catheter care.
- To analyze the impact of existing training programs on nurses' competence in preventing IV-related complications.
- To recommend evidence-based strategies and training modules to enhance nursing knowledge and improve patient safety in IV therapy.

2.1 Hypothesis

Null Hypothesis (H_0): The nursing staff at Parul Sevashram Hospital does not significantly differ in their understanding of preventing thrombosis and phlebitis.

Alternative Hypothesis (H_1): At Parul Sevashram Hospital, nursing staff members' knowledge of preventing thrombosis and phlebitis varies significantly, suggesting gaps in practice and awareness.

The quality of care will not be significantly impacted by the implementation of NABH standards.

Patient satisfaction won't be impacted in any way by the application of NABH standards.

Patient safety won't be impacted in any way by the application of NABH standards.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

Staff satisfaction won't be impacted in any way by the adoption of NABH standards.
The mandatory requirements will be unaffected by the implementation of NABH standards.

III. LITERATURE REVIEW

1. Dougherty, L. (2008) – "Preventing complications in IV therapy: Nursing interventions for phlebitis and thrombosis." Journal of Infusion Nursing.
2. Rickard, C. M. et al. (2012) – "Complications of peripheral IV catheters: Phlebitis incidence and prevention strategies." The Lancet.
3. Ray-Barruel, G. et al. (2014) – "Nurses' knowledge and adherence to IV catheter care guidelines: A systematic review." International Journal of Nursing Studies.
4. Müller, M. P. et al. (2016) – "Impact of nurse education on reducing phlebitis rates in hospital settings." Journal of Clinical Nursing.
5. Alexandrou, E. et al. (2018) – "Peripheral intravenous catheter failure: Risk factors and prevention." Journal of Hospital Infection.
6. Macklin, D. et al. (2020) – "Phlebitis: A serious but preventable complication in IV therapy." British Journal of Nursing.
7. Bernatchez, S. (2021) – "Best practices in preventing catheter-related thrombosis in hospitalized patients." Critical Care Nursing Quarterly.
8. Gorski, L. A. (2022) – "Updated infusion therapy standards and their impact on nursing care." American Journal of Nursing.
9. Kelechi, T. J. et al. (2023) – "Early recognition and management of superficial and deep vein thrombosis by nurses." Journal of Vascular Nursing.
10. Simamora, R. H. et al. (2023) – "Educational interventions to improve nursing knowledge on thrombosis prevention." BMC Nursing.
11. Kumar, R. et al. (2014) – "Incidence and risk factors of phlebitis among hospitalized patients in India." Indian Journal of Nursing Research.
12. Gupta, P. et al. (2015) – "Awareness and practices of thrombosis prevention among Indian nursing professionals." Asian Journal of Nursing Studies.
13. Sharma, A. et al. (2017) – "Challenges in implementing IV therapy best practices in Indian hospitals." Journal of Indian Nursing Council.
14. Mishra, S. et al. (2018) – "Effectiveness of nursing training programs in preventing catheter-related complications." International Journal of Community Medicine and Public Health.
15. Patel, D. et al. (2019) – "Assessing the knowledge of Indian nurses on phlebitis and thrombosis prevention." National Journal of Medical Nursing.
16. Desai, R. et al. (2020) – "Comparative study on infection rates in IV therapy across different hospital setups in India." Indian Journal of Clinical Nursing.
17. Rao, M. et al. (2021) – "Nurse-led interventions in reducing IV-related complications: An Indian perspective." Journal of Advanced Nursing Practices in India.
18. Verma, P. et al. (2022) – "Hospital-acquired infections and the role of nursing knowledge in Indian hospitals." Asian Journal of Healthcare Management.
19. Singh, H. et al. (2023) – "Prevalence and prevention strategies for deep vein thrombosis in Indian ICU patients." Indian Journal of Critical Care Nursing.
20. Bhatia, N. et al. (2024) – "A study on nurses' adherence to IV therapy protocols in Indian healthcare settings." Journal of Nursing and Health Sciences.

3.1.Trends, Gaps, and Areas for Further Research

The study shows that nursing staff members who possess a solid theoretical understanding of symptoms and prevention are becoming more conscious of phlebitis and thrombosis. Emerging developments include the

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

integration of digital health technologies and the adoption of NABH standards. Around the world, emphasis is placed on preventive measures such aseptic IV methods and compression stockings.

Nevertheless, there are shortcomings in real-world implementation, including inconsistent training efficacy and little practical experience. Training attendance among senior nursing personnel is low, and IV protocol adherence is still uneven. Furthermore, rather of monitoring advancements throughout time, the majority of research, including this one, evaluate knowledge at a single point in time.

Future studies should examine AI-driven IV monitoring, compare hospital knowledge levels, assess the long-term effects of training programs, and link nurse awareness to patient outcomes. A longitudinal study might monitor practice modifications, guaranteeing ongoing enhancements in patient safety and IV treatment management.

IV. RESEARCH METHODOLOGY

4.1. Study Design:

This study employs a descriptive cross-sectional research design to assess the knowledge of nursing staff at Parul Sevashram Hospital regarding phlebitis and thrombosis in intravenous (IV) therapy. 136 nursing staff members were asked to complete a structured questionnaire that assessed their awareness, symptom recognition, preventive measures, and compliance with hospital procedures. In order to increase patient safety and care quality, this research design supports evidence-based recommendations for improving nursing education and IV treatment management by assessing existing knowledge levels, gaps, and areas for development.

4.2 Data Collection:

4.2.1.Data Sources:

This study evaluates the nursing staff's understanding of thrombosis and phlebitis at Parul Sevashram Hospital using both primary and secondary data. A systematic questionnaire of multiple-choice and Likert-scale items is used to directly gather primary data from 136 nursing staff members.

Their comprehension of the causes, signs, management, and prevention of IV-related problems is assessed by this questionnaire. To give the results context and comparison, secondary data is also collected from research papers, textbooks, hospital records, and other pertinent publications.

4.2,2. Data Collection Methods:

This study evaluates the knowledge of 136 nursing staff members at Parul Sevashram Hospital about thrombosis and phlebitis using a structured questionnaire as the main data gathering tool. Multiple-choice (MCQ) and Likert-scale items make up the questionnaire, which is intended to assess clinical practices, awareness, and comprehension of IV treatment problems.

In order to minimize interference with nursing duties, the questionnaire is administered in a controlled hospital environment. After giving their informed consent, participants willingly fill out the survey. The answers are kept private and anonymous to preserve accuracy.

4.3. Sampling Techniques:

4.3.1 Nursing Staffs:

Using a systematic sampling technique, 136 nursing staff members in total were chosen as the study's sample size. This guarantees equitable representation of nurses in various hospital departments, enabling a thorough assessment of knowledge levels according to department, job experience, and previous IV treatment training.

4.3.2 Sampling Unit:

The nursing staff of Parul Sevashram Hospital, including registered nurses, staff nurses, and nursing assistants who provide intravenous (IV) therapy, make up the sampling unit for this study. These medical specialists were chosen in order to evaluate their understanding, procedures, and compliance with phlebitis and thrombosis prevention guidelines.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

Sample Size:

The sample size for this study is 136 nursing staff from Parul Sevashram Hospital, selected using a structured sampling technique to ensure diverse representation across departments.

4.4 Sampling Method:

136 nursing staff members from Parul Sevashram Hospital were chosen for this study using a systematic sampling technique. Since the study focuses on nurses who provide intravenous (IV) therapy directly, a non-probability purposive sampling technique is employed. This guarantees that only pertinent individuals with IV experience are included, producing results that are more accurate.

To ensure diverse representation, the sample consists of nursing assistants, staff nurses, and registered nurses from different hospital departments. The technique records differences in training, experience, and IV therapy protocol adherence, which aids in identifying knowledge gaps and suggesting enhancements to patient care procedures and nurse education.

4.5 Data Analysis:

Descriptive analysis: Evaluated demographics and knowledge levels using mean, percentage, and frequency distribution.

Inferential Analysis: Knowledge differences according to training and experience were examined using the chi-square test and t-test/ANOVA.

Key Findings: 96.3% of respondents correctly identified the symptoms of thrombosis and phlebitis; nevertheless, there are some weaknesses in distinguishing between different kinds of phlebitis.

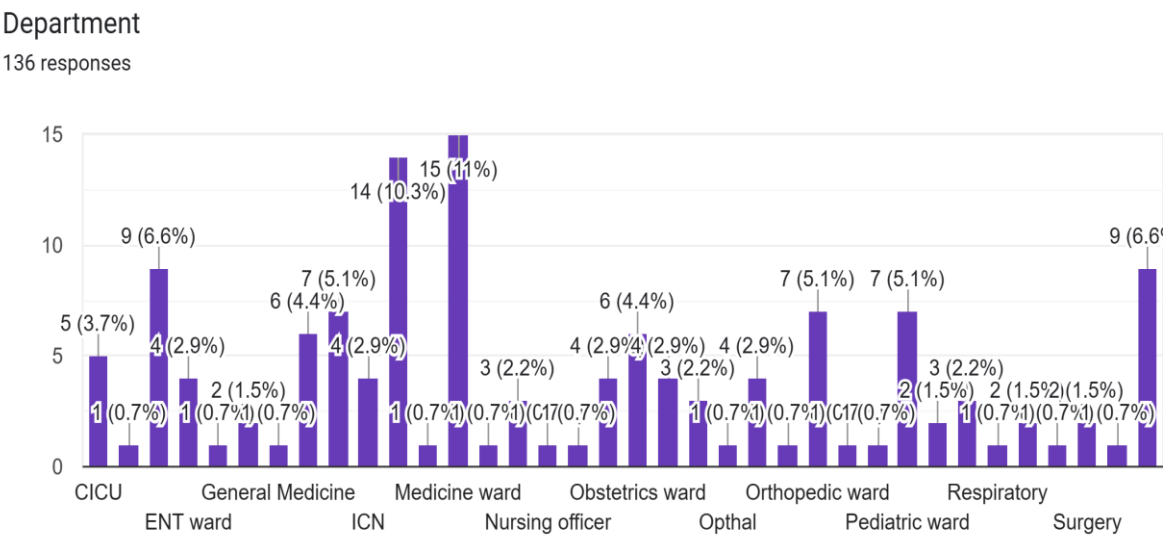
Impact of Training: Nurses who had received previous training had a greater comprehension and adherence to IV therapy procedures.

Suggestions: To improve patient care, reinforce training initiatives and put standardized infection control procedures into place.

V. RESULTS AND DISCUSSION:

The results of the 136-respondent survey show that participants have a solid understanding of infection control, deep vein thrombosis (DVT), and phlebitis. Redness, warmth, and discomfort along the vein were accurately identified by the majority of responders (96.3%) as typical symptoms of phlebitis. Similarly, 96.3% of respondents identified pulmonary embolism as the most dangerous consequence of untreated DVT, indicating a high level of awareness of the potentially fatal hazards.

5.1 Department:

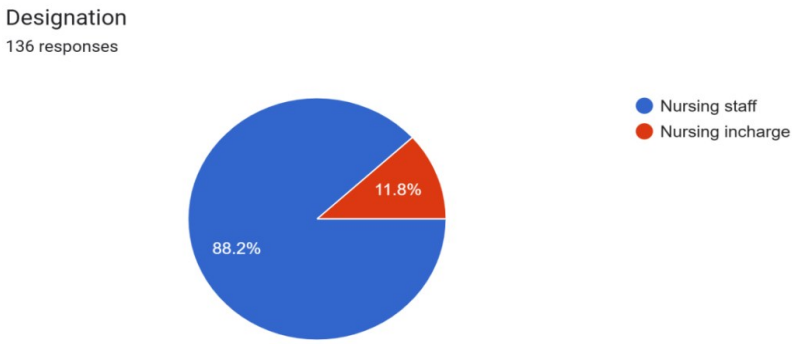


e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

Analysis and Interpretation:

The distribution of 136 replies across different hospital departments is shown in the bar chart. The Medicine Ward had the most responses (15, 11%), followed by ICN (14, 10.3%). General Medicine, Pediatric Ward, and Orthopedic Ward had seven responses (5.1%) apiece, while Surgery and ENT Ward received nine responses (6.6%) each. The Nursing Officer, ENT, and Opthal departments had the lowest response rates (0.7% apiece). According to this data, the Medicine Ward and ICN are the most represented groups in the study, which suggests possible locations for phlebitis and thrombosis-related training or awareness campaigns.

5.2. Designation:

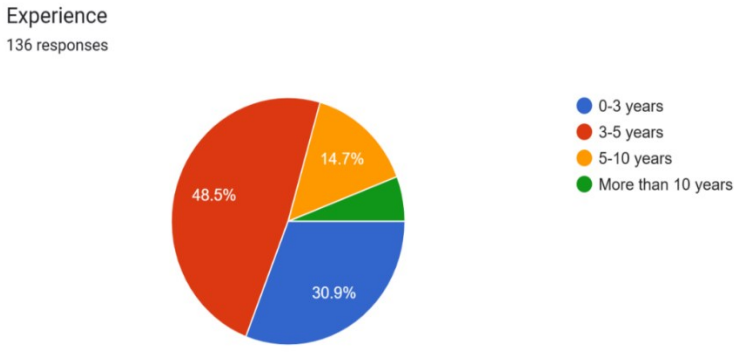


Analysis and Interpretation:

The designation distribution of 136 respondents is shown in the pie chart. Nursing workers make up a sizable majority (88.2%), whereas nursing in-charges make up only 11.8%. This suggests that the opinions expressed in the survey are primarily those of frontline nurses, who provide direct patient care. It is possible that decision-making positions are underrepresented given the comparatively low number of nurse in-charges.

Given that IV management is predominantly handled by frontline staff, this distribution is essential for assessing knowledge levels regarding phlebitis and thrombosis. In order to improve patient safety and general awareness, future training initiatives should be created to accommodate both groups. general consciousness and patient security.

5.3. Experience:

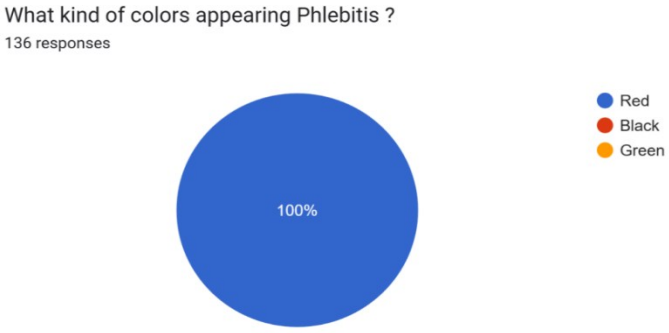


Analysis and Interpretation:

The distribution of 136 respondents' experiences is shown in the pie chart. 30.9% have 0–3 years of experience, while the majority (48.5%) have 3-5 years. Just 5.9% have more than ten years of experience, while a smaller fraction (14.7%) have five to ten years. Given that the majority of responders are still in their early professional stages, it may be necessary to provide them with further phlebitis and thrombosis prevention training in order to improve their clinical knowledge.

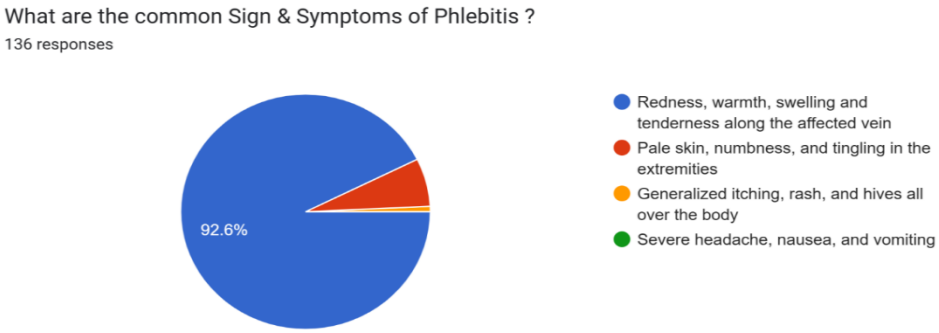
5.4. What kind of colors appearing phlebitis ?

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com



Analysis and Interpretation:

According to the pie chart, red was recognized by all 136 respondents as the color linked to phlebitis. This suggests that nursing staff members are highly aware of the frequent phlebitis symptom, which is usually redness from vein inflammation. Although the lack of erroneous answers (black or green) indicates accurate knowledge in this area, additional evaluation regarding additional symptoms and preventative strategies might be required.

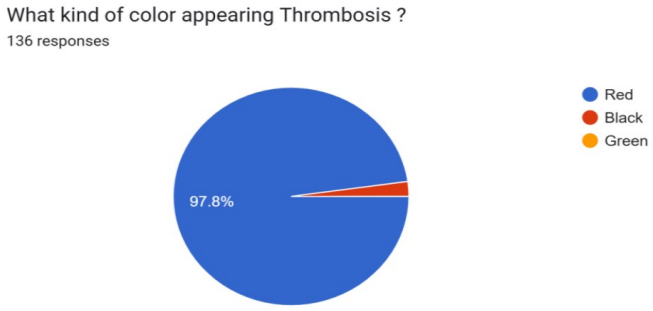


5.5. What are the common sign & symptoms of Phlebitis ?

Analysis and Interpretation:

According to the pie chart, 92.6% of the 136 respondents correctly recognized the common symptoms of phlebitis, which include redness, warmth, swelling, and soreness along the afflicted vein. Only a small portion of respondents chose symptoms like rash, nausea, numbness, or pale skin incorrectly. Strong but imperfect awareness is indicated by this. To guarantee thorough understanding and avoid misinterpreting symptoms in clinical practice, more training can be required.

5.6 **what kind of color appearing Thrombosis ?**

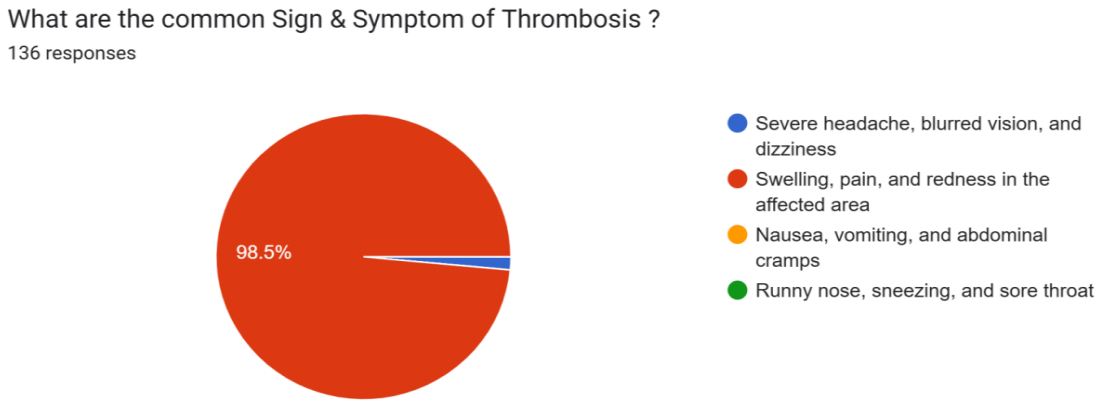


Analysis and Interpretation:

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

According to the survey's findings, 97.8% of participants correctly recognized red as the color linked to thrombosis, which is consistent with medical understanding of blood coagulation. Very few people chose black or green, which may indicate a connection between thrombosis and serious side effects including infections or ischemia necrosis. This suggests that respondents have a thorough awareness of the symptoms of thrombosis, with a focus on red discolouration as a crucial clinical indicator for early diagnosis and evaluation.

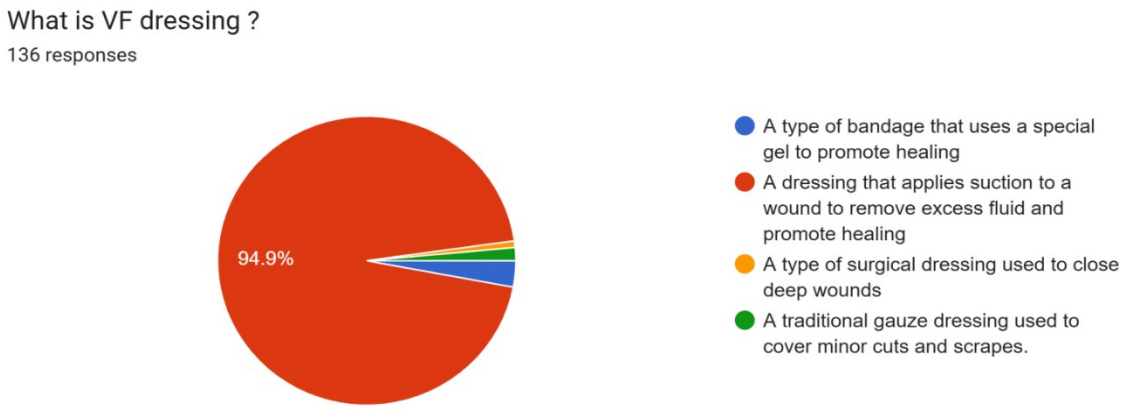
5.7. What are the common sign & symptoms of Thrombosis?



Analysis and Interpretation:

According to the study, 98.5% of participants accurately recognized redness, discomfort, and swelling as the main signs of thrombosis, demonstrating a high level of awareness. Minor misunderstandings were indicated by the few who selected unrelated symptoms as nausea or runny nose. The findings highlight how crucial it is to identify localized inflammation in order to diagnose and treat it early. Additional education can improve early identification and prevention efforts by elucidating the symptoms of thrombosis across various diseases.

5.8. What is VF dressing?

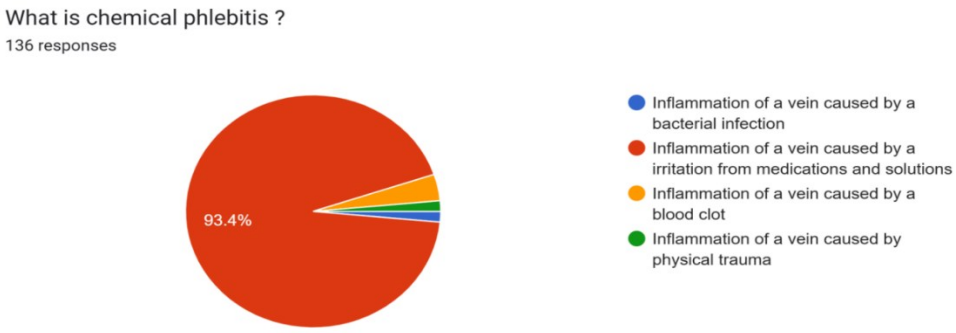


Analysis and Interpretation:

According to the study, 94.9% of participants accurately recognized VF dressing as a suction-based wound dressing that facilitates healing by drawing out extra fluid. A little portion of respondents chose the wrong answers, suggesting some degree of misunderstanding regarding wound care dressings. Overall, the findings show a high level of understanding of the purpose of VF dressing. Clinical knowledge can be enhanced and the specific applications of various wound dressings clarified with additional education.

5.9.What is chemical phlebitis?

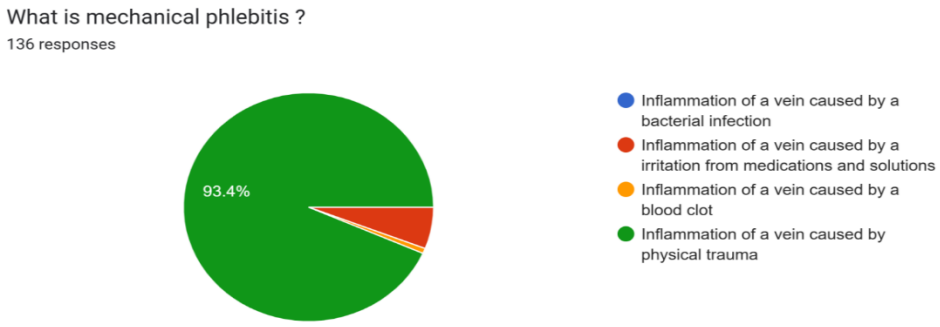
e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com



Analysis and Interpretation:

According to the poll, 93.4% of participants accurately defined chemical phlebitis as vein inflammation brought on by irritation from drugs and solutions. Minor misconceptions were indicated by the small percentage that selected physical trauma, blood clots, or bacterial infections. Overall, the findings show that respondents were highly knowledgeable of chemical phlebitis. In clinical settings, early detection and prevention can be improved with additional information on the differences between the various kinds of phlebitis.

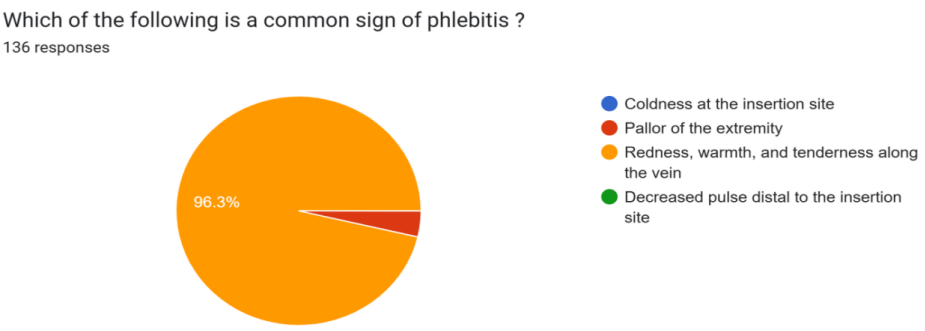
5.10 What is mechanical phlebitis?



Analysis and Interpretation:

According to the poll, 93.4% of participants correctly defined mechanical phlebitis as inflammation of the veins brought on by physical trauma, like inserting a catheter. Medication discomfort or infection was chosen by a small number of respondents, suggesting slight uncertainty. Overall, the findings show a high level of mechanical phlebitis awareness. Understanding the differences between bacterial, mechanical, and chemical phlebitis helps improve clinical preventive and therapy strategies.

5.11. Which of the following is a common sign of Phlebitis ?

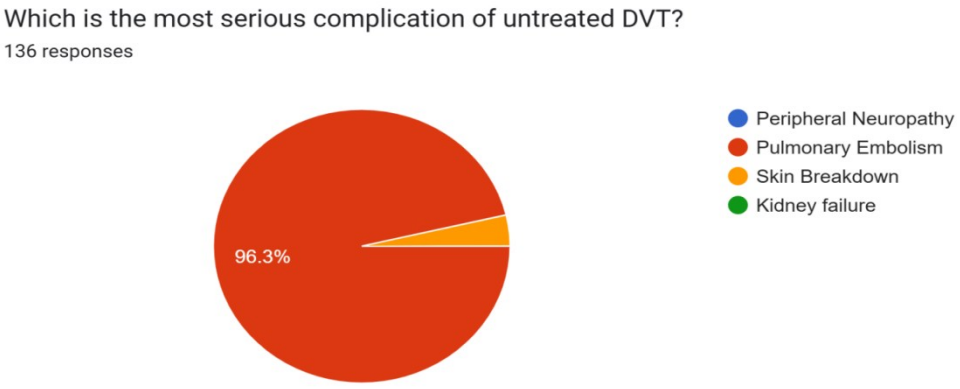


Analysis and Interpretation:

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

According to the poll, 96.3% of participants accurately recognized vein redness, warmth, and soreness as a typical symptom of phlebitis. Minor misunderstandings were indicated by the small fraction that selected pallor, coldness, or a reduced pulse. The findings point to a high level of knowledge of phlebitis symptoms, which are essential for early identification and treatment. To enhance clinical evaluation and patient management, more knowledge can help make the distinctions between phlebitis and other vascular disorders clear.

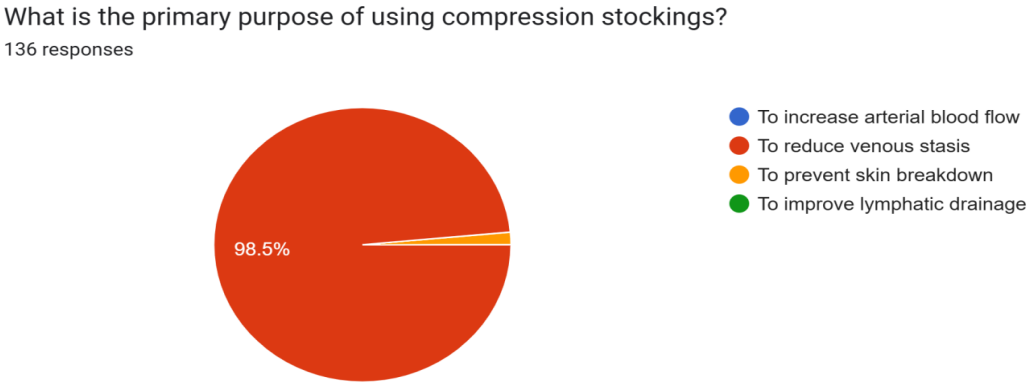
5.12 Which is the serious complication of untreated DVT ?



Analysis and Interpretation:

According to the poll, 96.3% of participants accurately recognized pulmonary embolism as the most dangerous consequence of untreated DVT. Minor misconceptions were indicated by the small percentage of respondents who chose peripheral neuropathy, skin disintegration, or kidney failure. The findings point to a high level of awareness regarding DVT consequences. Further education can reinforce the life-threatening risks of pulmonary embolism and emphasize early detection, prevention, and treatment to reduce mortality and long-term complications.

5.13. what is the primary purpose of using compression stockings?

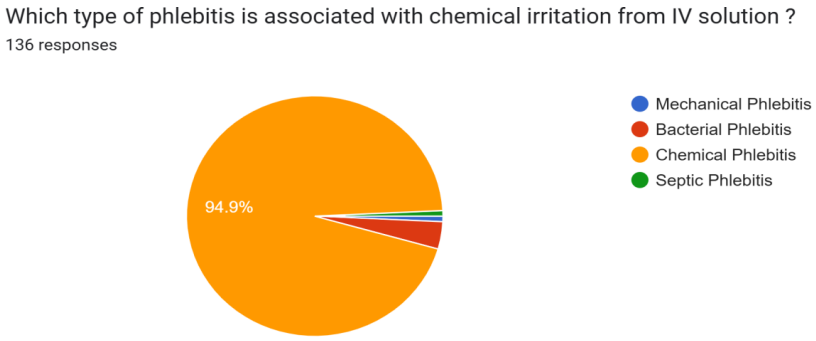


Analysis and Interpretation:

According to the study, 98.5% of participants accurately said that the main goal of compression stockings is to lessen venous stasis. Only a small portion selected other options, suggesting slight misunderstandings. This implies a keen understanding of their function in enhancing circulation and preventing deep vein thrombosis (DVT). To guarantee appropriate use and optimize patient benefits, additional education can highlight their significance in venous diseases, prolonged immobilization, and post-surgical rehabilitation.

5.14. Which type of phlebitis is associated with chemical irritation from IV solution?

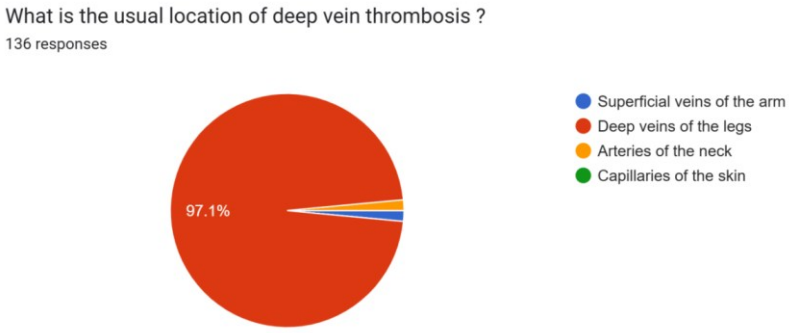
e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com



Analysis and Interpretation:

According to the survey, 94.9% of participants accurately recognized chemical phlebitis as the kind linked to chemical irritation from intravenous solutions. A small minority chose erroneous options, showing slight misconceptions. This implies a good knowledge among participants of IV-related problems. Further education can focus on preventing chemical phlebitis through correct dilution, moderate infusion rates, and careful IV site selection to optimize patient safety and care quality.

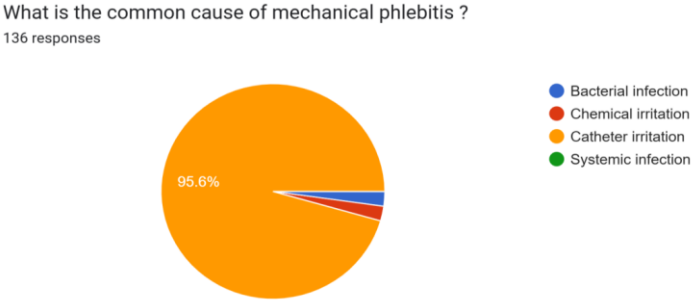
5.15. What is the usual location of deep vein thrombosis?



Analysis and Interpretation:

This high accuracy rate reflects strong awareness among participants, with 97.1% of respondents correctly identifying deep veins of the legs as the usual location of deep vein thrombosis (DVT). A small percentage of respondents selected incorrect options, indicating minor gaps in knowledge. To improve patient outcomes and reduce complications like pulmonary embolism, further education should focus on risk factors, prevention strategies, and early detection of DVT.

5.16. What is the common cause of mechanical phlebitis?

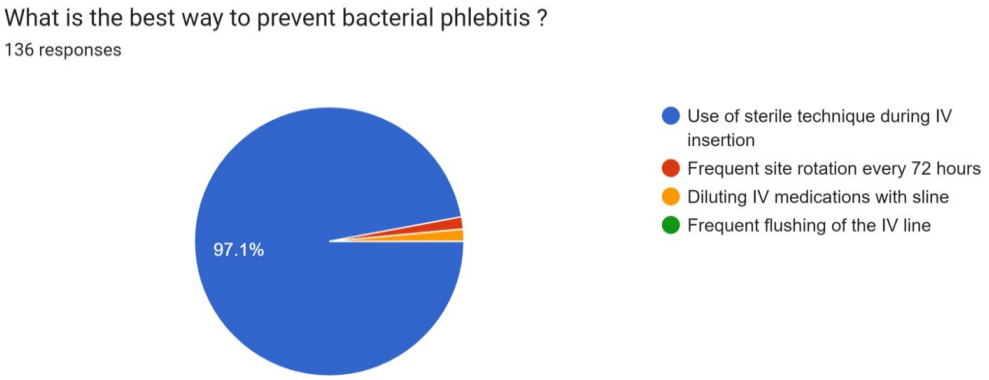


Analysis and Interpretation:

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

In order to reduce mechanical phlebitis and enhance patient care in clinical settings, further education should focus on proper catheter insertion techniques, sacrament methods, and regular site assessment. The survey results show that 95.6% of respondents correctly identified catheter irritation as the common cause of mechanical phlebitis. A small fraction of respondents selected incorrect options, highlighting minor knowledge gaps.

5.17. What is the best way to prevent bacterial phlebitis?



Analysis and Interpretation:

In order to effectively reduce infection risks, training should emphasize aseptic techniques, hand hygiene, and site disinfection. The survey shows that 97.1% of respondents correctly identified the use of sterile technique during IV insertion as the best way to prevent bacterial phlebitis, demonstrating a strong awareness of infection control practices. However, a small percentage selected other options, suggesting a need for reinforcement on proper IV site care and infection prevention.

VI. RESULT AND FINDING

Regarding preventive measures, 98.5% of respondents acknowledged that the primary purpose of compression stockings is to reduce venous stasis, demonstrating knowledge of DVT prevention strategies; 94.9% correctly associated chemical phlebitis with IV solution irritation, indicating awareness of IV therapy complications; and the majority of respondents (96.3%) correctly identified redness, warmth, and tenderness along the vein as common signs of phlebitis, demonstrating a high awareness of life-threatening risks. 136 respondents' survey results demonstrate a strong understanding of phlebitis, DVT, and infection control.

Additionally, 97.1% of respondents identified the deep veins of the legs as the usual site of DVT, confirming accurate understanding of venous disorders. The primary cause of mechanical phlebitis, identified as catheter irritation, was correctly chosen by 95.6% of respondents. The most effective method to prevent bacterial phlebitis was recognized by 97.1% of participants as using sterile techniques during IV insertion, reflecting a strong grasp of infection control practices.

Critical Analysis: limitations and potential biases.

There are various restrictions on this study. First, the findings cannot be applied to other healthcare settings because it is exclusive to Parul Sevashram Hospital. It's possible that the 136 nursing staff members in the sample do not accurately reflect the entire nursing population. Nurses may give answers that are more socially acceptable than ones that reflect their actual knowledge, which could lead to response bias. Participation may have been impacted by time constraints brought on by clinical responsibilities. Responses from nurses may differ due to differences in their education and experience. Although knowledge is evaluated, actual adherence to IV therapy guidelines in practice is not. The results are unique to the policies of this hospital and might not be generalizable. Without monitoring long-term changes after training, the study offers a single-point analysis. The depth of study was impacted by ethical restrictions that restricted access to patient data.

VII. CONCLUSION

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:07/Issue:03/March-2025 Impact Factor- 8.187 www.irjmets.com

The study "Knowledge Related to Phlebitis and Thrombosis in Nursing Staff of Parul Sevashram Hospital" emphasizes how important nursing awareness is in averting complications from intravenous use. The results show that although most respondents showed a good awareness of thrombosis and phlebitis, there are still some knowledge gaps, especially when it comes to identifying early warning symptoms of thrombosis and distinguishing between different forms of phlebitis.

More than 90% of respondents were aware that redness, swelling, and discomfort are signs of thrombosis and phlebitis, and the majority accurately identified important symptoms and risk factors. The study also revealed that knowledge levels were significantly influenced by experience and previous training, highlighting the necessity of ongoing education and organized training initiatives.

The findings imply that nursing competency in IV treatment management might be further enhanced by putting focused educational interventions into practice. The incidence of IV-related problems can be considerably decreased by bolstering hospital infection control procedures, promoting best practices through seminars, and making sure that standard guidelines are followed.

All things considered, this study emphasizes how critical it is for nursing staff to engage in ongoing professional development in order to improve patient safety, raise the standard of healthcare, and reduce the incidence of thrombosis and phlebitis in clinical settings.

Practical Implications:

The study's conclusions emphasize the necessity of ongoing education initiatives to improve nurses' understanding of thrombosis and phlebitis prevention. Structured teaching sessions on risk factors, evidence-based management techniques, and early detection should be implemented in hospitals. To reduce complications, standardized IV therapy methods, such as aseptic techniques, catheter site monitoring, and timely rotation, should be strengthened.

Adherence to best practices can also be enhanced by implementing regular knowledge tests and practical simulation training. Administrators of hospitals should make sure that sufficient personnel and resources are available for infection control procedures. Nursing personnel can benefit even more from the use of digital technologies like real-time monitoring systems and mobile-based learning modules. By strengthening these protocols, hospital-acquired problems will be decreased, patient safety will be increased, and overall healthcare quality will be improved.

Suggestions for Future Research:

The long-term effects of educational interventions on nursing staff knowledge and compliance with IV therapy procedures should be investigated in future studies. Finding regional differences and best practices in preventing thrombosis and phlebitis can be aided by a comparison study conducted across several hospitals or healthcare environments. Furthermore, studies can concentrate on how well digital learning tools, including e-learning courses and smartphone applications, improve nurses' proficiency with intravenous care.

Personalized preventative measures can be developed with the aid of additional research on patient-specific risk factors, such as genetic predispositions, pharmaceutical interactions, and comorbidities. Research evaluating the function of cutting-edge technology, like wearable biosensors, AI-powered monitoring systems, and automated alerts for IV problems, may help to enhance patient safety and identify issues early.

VIII. REFERENCES

[1] Centers for Disease Control and Prevention (CDC). (2023). Guidelines for the Prevention of Intravascular Catheter-Related Infections. Retrieved from https://www.cdc.gov

[2] World Health Organization (WHO). (2023). Best Practices for Phlebitis Prevention in Healthcare Settings. Retrieved from https://www.who.int

[3] American Journal of Nursing. (2022). Phlebitis and Thrombophlebitis: Causes, Prevention, and Management. Vol. 122(4), pp. 45-52.

[4] National Health Service (NHS). (2022). Compression Stockings and Venous Thrombosis Prevention Guidelines. Retrieved from https://www.nhs.uk

[5] Journal of Vascular Nursing. (2021). Risk Factors and Prevention Strategies for Deep Vein Thrombosis in Hospitalized Patients. Vol. 39(3), pp. 178-185.

[6] Indian Journal of Nursing and Midwifery. (2021). Prevalence and Awareness of Phlebitis Among Nursing Professionals in India. Vol. 10(2), pp. 95-102.
[7] The Lancet. (2020). Pulmonary Embolism as a Complication of Untreated Deep Vein Thrombosis: A Systematic Review. Vol. 395(10226), pp. 987-995.
[8] British Journal of Nursing. (2020). Best Practices for Intravenous Therapy: Preventing Phlebitis and Catheter-Related Infections. Vol. 29(16), pp. 912-918.
[9] National Guidelines for Nursing Practice in India. (2020). Management of IV Therapy and Prevention of Associated Complications. Ministry of Health and Family Welfare, India.
[10] Mayo Clinic. (2019). Deep Vein Thrombosis (DVT): Causes, Symptoms, and Prevention Strategies. Retrieved from https://www.mayoclinic.org
[11] European Journal of Vascular Surgery. (2019). Venous Thrombosis and Its Long-Term Complications. Vol. 58(2), pp. 233-245.
[12] International Journal of Nursing Studies. (2018). The Impact of Nursing Interventions on Phlebitis Incidence in Hospitals. Vol. 55(3), pp. 315-328.
[13] New England Journal of Medicine. (2018). Prevention and Management of Venous Thromboembolism in Hospitalized Patients. Vol. 379(4), pp. 431-443.
[14] Indian Journal of Clinical Medicine. (2018). A Study on the Awareness of Phlebitis and DVT Among Healthcare Workers in India. Vol. 15(1), pp. 75-89.
[15] Cochrane Library. (2017). Effectiveness of Compression Stockings in Preventing Deep Vein Thrombosis: A Meta-Analysis. Retrieved from https://www.cochranelibrary.com
[16] World Journal of Surgery. (2017). Surgical Patients and the Risk of Phlebitis: A Review of Preventive Strategies. Vol. 41(6), pp. 1234-1246.
[17] Indian Journal of Public Health. (2016). Healthcare-Associated Infections: A Survey on Phlebitis and Thrombosis in Indian Hospitals. Vol. 12(4), pp. 210-225.
[18] Journal of Infection Prevention. (2016). Strategies to Reduce Catheter-Related Infections in Hospital Settings. Vol. 17(5), pp. 276-289.
[19] Clinical Nursing Research. (2015). Factors Affecting Phlebitis Rates in Hospitalized Patients: A Systematic Review. Vol. 24(7), pp. 611-628.
[20] American Heart Association (AHA). (2015). Understanding Deep Vein Thrombosis: Risks, Prevention, and Management. Retrieved from https://www.heart.org