DOI: https://doi.org/10.54393/pjhs.v4i08.969

PAKISTAN JOURNAL OF HEALTH SCIENCES

https://thejas.com.pk/index.php/pjhs

Volume 4, Issue 8 (August 2023)

Original Article

Level of Knowledge of Bedside Nursing Staff Regarding Phlebitis of a Tertiary Care Hospital, Karachi

Muhammad Hasnain Shaikh[1*], Rizwan Ali[1], Tufail Ahmad[2], Ahsan Manan[2], Ismail Khan[2], Muhammad Jehangeer Khan[2] and Afsha Bibi[1]

[1]Horizon School of Nursing and Health Sciences, Karachi, Pakistan
[2]Faculty of Nursing and Midwifery, Ziauddin University, Karachi, Pakistan

ARTICLE INFO

Key Words:
Asses, Phlebitis, Bedside, Nurses, Knowledge

How to Cite:
Shaikh, M. H., Ali, R. ., Ahmad, T. ., Manan, A., Khan, I., Khan, M. J. . ., & Bibi, A. (2023). Level of Knowledge of Bedside Nursing Staff Regarding Phlebitis of a Tertiary Care Hospital, Karachi: Knowledge of Nursing Staff Regarding Phlebitis. Pakistan Journal of Health Sciences, 4(08). https://doi.org/10.54393/pjhs.v4i08.969

***Corresponding Author:**
Muhammad Hasnain Shaikh
Horizon School of Nursing and Health Sciences, Karachi, Pakistan
hasnainasif9011@gmail.com

Received Date: 2nd August, 2023
Acceptance Date: 28th August, 2023
Published Date: 31st August, 2023

ABSTRACT

Phlebitis is the inflammation of the vein's inner layer, venous tunica intima called phlebitis. The complications that commonly occur due to phlebitis are erythema, pain, swelling, and palpable thrombosis of the cannulated vein. **Objective:** To identify the current knowledge of bedside nursing staff regarding phlebitis. **Methods:** A cross-sectional study was carried out to find knowledge regarding phlebitis among nurses through self-administered questionnaires with 100 bedside nurses working in different wards of a Private Tertiary Hospital in Karachi, Pakistan, by a convenient sampling technique. Data were collected and analyzed by the SPSS software version-22. **Results:** The result of this study showed that among 100 participants, 50% participants have inadequate knowledge regarding phlebitis, 44% had average, and 6% had good knowledge regarding phlebitis. **Conclusions:** This study concluded that bedside staff nurses have insufficient knowledge regarding phlebitis. This poor knowledge can reduce the effectiveness of nursing care provided to the patient. Therefore, educational sessions and interventional study needed to enhance their knowledge regarding phlebitis.

INTRODUCTION

Health promotion, better results, and the restoration of health and well-being all benefit from nursing care in hospitals. Peripheral intravenous cannula maintenance, monitoring, and care are all included in this [1]. Administration of parenteral medicine is an essential component of intravenous therapy and an integral part of the nursing field. Nursing staff monitor, administer and provide care to the patients prescribed by the clinicians or doctors [2]. Phlebitis is a common, avoidable complication faced by patients during intravenous therapy. In the modern era, Intravenous therapy is an essential and main component in medicine and treatment [3]. Intravenous therapy meets the patient's needs for fluid, nutrients, medicines and blood products [4]. Phlebitis is the inflammation of the vein inner layer of venous tunica intima called phlebitis [5]. The complications that commonly occur due to phlebitis are erythema, pain, swelling, and palpable thrombosis of the cannulated vein [6]. Furthermore, between 2017 and 2021, there were 1.82 instances of phlebitis for every 100 days when a venous catheter was used [7]. A recent study showed that 80 participants (6.1%) out of 1,319 experienced phlebitis.

DOI: https://doi.org/10.54393/pjhs.v4i08.969

Reduced mobility (p = 0.015), family history of deep vein thrombosis (p = 0.05), catheterization of veins on the back of the hand (p = 0.012), pain (p 0.01), Amoxicillin-Potassium Clavulanate (p = 0.015), and Omeprazole Sodium (p = 0.029) were all linked to the development of phlebitis [8]. Moreover, phlebitis may classify into four different types on the basis of basic factors [9]. These are mechanical, infectious, chemicals and post-infusion phlebitis [10]. There are some patient factors such as high age, female gender and some diseases conditions (malignancy, immunosuppression and malnutrition) that cause and increase the risk of developing phlebitis [11]. Staff nurses play an essential role in minimizing the rate of phlebitis and the complications of phlebitis in the patients who receive medical care [12]. So, this assesses the current knowledge of nurses regarding phlebitis.

METHODS

This study was performed to investigate nurses' current knowledge regarding phlebitis. This study used a cross-sectional, quantitative approach with a sample size of 100 bedside nurses. It was conducted with a convenient sampling technique from December 2022 to April 2023 at a private-sector tertiary care hospital in Karachi, Pakistan. The study population was registered nursing staff who were working in different wards in the hospital. Registered Nursing staff (RN) and graduated nursing staff (BScN) with a working experience of 6 months with voluntary participation are included in the research. Licensed practical nurses, practical nurses, nursing staff not willing to participate and nurses with less than six months of experience were excluded from the study. With a population of 150, the sample size was determined using open EPI version 3 and a 95% confidence interval. The size of the obtained sample is 100. The data were collected by a self-administered questionnaire with 15 questions and demographic characteristics. The knowledge scoring system is 0-2, where 0 means don't know, 1 means no, and 2 means yes. The total score of the tool is 30, and below 50% is considered low-level knowledge, 50% to 70% is average-level knowledge, and above 70% is considered good-level knowledge. This study data were computed and analyzed in Social Package for Statistical Science (SPSS) software version 22.0. Inform consent was taken from each participant before filling out the questionnaire. We ensured our participants from any potential psychological, physical or social harm. This research was conducted after permission from a selected private tertiary care hospital, and study approval was taken from the Institute.

RESULTS

The table presents the results of a study involving 100 Nurses. It includes variables such as gender, age, job rank, experience, healthcare setting, and level of education. Among the participants, 74% were female, and the majority fell within the age range of below 30 years (51%). The most common job rank was staff nurse (89%); nearly half of the participants had 1-5 years of experience (49%). The medical setting was the most common (64%), and most participants had the educational qualification of a registered nurse (65%). The table provides a concise overview of the demographic and professional characteristics of the study participants.

Table 1: Demographic characteristics of the participants n=100

Name of variable, Response/ Category	Frequency (%)
Gender	
Male	26 (26)
Female	74(74)
Total	100(100)
Age	
<30 Years	51(51)
30-45 Years	32(32)
45 > Years	17(17)
Total	100(100)
Nurse In charge	11(11)
Staff Nurse	89(89)
Total	100(100)
Experience	
6 months -1 year	25(20)
1-5 years	49(49)
6-10 years	26(26)
Total	100(100)
Healthcare Setting	
Medical	64(64)
Surgical	25(25)
Maternal child health sections	5(5)
Emergency outpatient department	6(6)
Total	100(100)
Level of Education	
Registered Nurse	65(65)
Bachelor	35(35)
Total	100(100)

Table 2 shows the result of the overall level of knowledge among 100 participants; 50% of participants have inadequate knowledge regarding phlebitis, 44% have average, and 6% have good knowledge regarding phlebitis.

Table 2: Levels of knowledge Regarding Phlebitis

Knowledge Level	Frequency (%)
Inadequate	50(50)
Average	44(44)
Good	6(6)

DISCUSSION

With an incidence rate of 20% in Pakistan, 27.7% in India, and 4% in the United States, phlebitis is a serious public health concern [13]. The nursing team at the patient's

DOI: https://doi.org/10.54393/pjhs.v4i08.969

bedside is crucial in the early diagnosis and treatment of phlebitis [14, 15]. The nursing staff, however, lacks an understanding of phlebitis, which could result in subpar patient treatment and elevated patient risks. This study evaluates the level of phlebitis knowledge held by bedside nursing staff. In this regard, a study concluded that nursing interventions for preventing and managing the occurrence may be (re)designed given the prevalence of known phlebitis [10]. Present findings show that only 6% had good knowledge regarding phlebitis. Another study from India found that 13.5 had good knowledge [16]. In contrast, a study from Nepal found that 82.47% of respondents had good knowledge [17]. Additionally, more than half of the nurses were unaware that the cannula's material and diameter could influence the frequency of phlebitis [18]. These findings may be due to varying countries' or healthcare facilities' training and educational programs for nursing workers that can produce varying levels of knowledge. As a result, it is necessary to recognize the most frequent potential dangers associated with continuing to support phlebitis to minimize pressure damage prevention and management and improve the standard of healthcare services provided in hospitals [19]. Moreover, the present findings show that 50% had inadequate knowledge regarding phlebitis. In this regard, another study shows that 38.5% of nurses had poor knowledge study recommended that nurses enhance their infusion knowledge and abilities to lessen difficulties and discomfort caused by infusion [20]. Similarly, another study by Rai *et al.*, found that 19.80 was the low mean score for pretest knowledge regarding phlebitis. The study suggested that the knowledge score of nursing staff improved when the structural instruction plan was implemented. Therefore, it can be said that educational intervention was successful [21]. Moreover, another study found that most nurses lacked sufficient knowledge of phlebitis and suggested that nurses did not adhere to current recommendations and required further knowledge and ongoing education [22]. Present findings show that 44% had average knowledge regarding phlebitis. At the same time, a study from India reported moderately adequate knowledge (53.4%) [16]. Another study found that most students (60.6%) had fair knowledge [23]. The frequency of phlebitis and other problems will likely be reduced with proper insertion technique and venous catheter management. Therefore, nurses' ongoing education is crucial [7]. The study's results demonstrated that using a standardized Peripheral Venous Catheter (PVC), care package can improve the detection and assessment of phlebitis and help lower its incidence. The audit approach helped put the research into practice since it allowed for post- and pre-implementation evaluations of the nurses' compliance with the PVC care bundle [24].

CONCLUSIONS

These findings point to a significant knowledge gap among the participants, which can impact patient care and safety. Targeted educational initiatives are required to raise the knowledge and awareness of the bedside nursing staff to provide the best patient outcomes and prevent complications linked to phlebitis.

Authors Contribution

Conceptualization: MHS, RA
Methodology: TA
Formal Analysis: TA
Writing-review and editing: AM, IK, MJK, AB

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The authors received no financial support for the research, authorship and/or publication of this article.

REFERENCES

[1] Potter PA, Perry AG, Stockert PA, Hall A, Astle BJ, Duggleby W. Canadian Fundamentals of Nursing-E-Book: Elsevier Health Sciences; 2018.

[2] Pasalioglu KB and Kaya H. Catheter indwell time and phlebitis development during peripheral intravenous catheter administration. Pakistan Journal of Medical Sciences. 2014 Jul; 30(4): 725. doi: 10.12669/pjms.304.5067.

[3] Hossain AM, Hasan MI, Haque M. Assessment of the level of knowledge and practice on intravenous cannulization among staff nurses of selected tertiary care hospital in Dhaka city. MOJ Public Health. 2016 Jun; 4(5): 00095. doi: 10.15406/mojph.2016.04.00095.

[4] Vicdan A. Evaluation of knowledge on intravenous fluid therapy of the nurses. European Journal of Research on Education. 2013 :135-8.

[5] Divya A, Vijayasamundeeswari P, Geetha D. Effectiveness of Planned Teaching Program on Knowledge and Practice Regarding Intravenous Therapy among Paediatric Nurses. Journal of Clinical & Diagnostic Research. 2021 Sep; 15(9): 13-6. doi: 10.7860/JCDR/2021/49129.15412.

[6] Li XF, Liu W, Qin Y. Nurses' perception of risk factors for infusion phlebitis: A cross-sectional survey. Chinese Nursing Research. 2016 Mar; 3(1): 37-40. doi: /10.1016/j.cnre.2016.03.002.

[7] Cernuda Martínez JA, Suárez Mier MB, Martínez

DOI: https://doi.org/10.54393/pjhs.v4i08.969

Ortega MDC, Casas Rodríguez R, Villafranca Renes C, Del Río Pisabarro C. Risk factors and incidence of peripheral venous catheters-related phlebitis between 2017 and 2021: A multicentre study (Flebitis Zero Project). Journal of Vascular Access. 2023 Jul: 11297298231189963. doi: 10.1177/11297298231189963.

[8] Simões AM, Vendramim P, Pedreira ML. Risk factors for peripheral intravenous catheter-related phlebitis in adult patients. Revista da Escola de Enfermagem da USP. 2022 Jun; 56: e20210398. doi: 10.1590/1980-220x-reeusp-2021-0398pt.

[9] Saini R, Agnihotri M, Gupta A, Walia I. Epidemiology of infiltration and phlebitis. Nursing & Midwifery Research Journal. 2011 Jan; 7(1): 22-33. doi: 10.33698/NRF0118.

[10] Souza AE, Oliveira JL, Dias DC, Nicola AL. Prevalence of phlebitis in adult patients admitted to a university hospital. Northeast Network Nursing Journal. 2015 Jan; 16(1): 114-22. doi: 10.15253/2175-6783.20150 00100015.

[11] Palese A, Ambrosi E, Fabris F, Guarnier A, Barelli P, Zambiasi P, *et al*. Nursing care as a predictor of phlebitis related to insertion of a peripheral venous cannula in emergency departments: findings from a prospective study. Journal of Hospital Infection. 2016 Mar; 92(3): 280-6. doi: 10.1016/j.jhin.2015.10.021.

[12] Cottrill KN. Implementation of an amiodarone infusion nurse practice guideline to reduce the incidence of phlebitis: A quality improvement project. Graduate Thesis, Dissertations, and Problem Reports. 2022. Available at: https://www.proquest.com/docview/2800162239?pq-origsite=gscholar&fromopenview=true.

[13] Lal B. Factors Contributing To Phlebitis Among Patients Admitted In Medical-Surgical Units At Tertiary Care: Liaquat Medical Research Journal. Liaquat Medical Research Journal. 2020 Jun; 2(2): 38-45. doi: 10.38106/LMRJ.2020.2.2.03.

[14] Salgueiro-Oliveira AD, Basto ML, Braga LM, Arreguy-Sena C, Melo MN, Parreira PM. Nursing practices in peripheral venous catheter: phlebitis and patient safety. Texto & Contexto-Enfermagem. 2019 Jul; 28: 1-13. doi: 10.1590/1980-265x-tce-2018-0109.

[15] Bibi A, Ali M, Pervaiz S, Mary S, Mary M, Bagga S, *et al*. Knowledge Regarding Risk Factors of Phlebitis and its Association with Education Among Nurses at Tertiary Care Hospital, Karachi: Knowledge Regarding Risk Factors of Phlebitis. Pakistan Journal of Health Sciences. 2023 Apr 30: 75-8. doi: 10.54393/pjhs.v4i04.704.

[16] Sudhakar M and Dhakshinamoorthy S. Knowledge and practice on prevention of phlebitis among nurses working in ccu at selected hospitals Chennai. TNNMC Journal of Medical & Surgical Nursing. 2021 Mar; 9(1): 12-4.

[17] Osti C, Khadka M, Wosti D, Gurung G, Zhao Q. Knowledge and practice towards care and maintenance of peripheral intravenous cannula among nurses in Chitwan Medical College Teaching Hospital, Nepal. Nursing Open. 2019 Jul; 6(3): 1006-12. doi: 10.1002/nop2.288.

[18] Milutinović D, Simin D, Zec D. Risk factor for phlebitis: a questionnaire study of nurses' perception. Revista latino-Americana De Enfermagem. 2015 Jul; 23: 677-84. doi: 10.1590/0104-1169.0192.2603.

[19] Bibi S, Parveen K, Abdullahi DK, Afzal M, Gilani SA. Knowledge Regarding Perception of Risk Factors for Phlebitis Among Nursing Students. Globus an International Journal of Medical Science, Engineering & Technology. 2022 Jan; 11(1): 9-15.

[20] Dewi NA and Hidayat A. The Relationship Between Knowledge of Novice Nurses and The Incidence of Phlebitis In Cipto Mangunkusumo Hospital, Jakarta. Jurnal Kesehatan Komunitas. 2022 Aug; 8(2): 306-13. doi: 10.25311/keskom.Vol8.Iss2.1278.

[21] Rai S, Mandal G, Tamang B, Rai HK. Effectiveness of Structured Teaching Programme Regarding Phlebitis Associated with Peripheral Intravenous Cannulation Among Nurses Working in Selected Wards of BPKIHS. Galore International Journal of Applied Sciences and Humanities. 2022 Dec; 6(4): 9-15. doi: 10.52403/gijash.20221003.

[22] Koyuncu A, Ayla Ya, Demirkiliç U. The Knowledge and Attitudes of Nurses on Phlebitis in a Training and Research Hospital. Turkish Journal of Vascular Surgery. 2012 Oct; 22(2): 217-224. doi: 10.9739/uvcd.2013-36541.

[23] Harshani RA and Perera PP. Knowledge and attitudes of final year nursing students of National School of Nursing, Sri Jayewardenepura and School of Nursing, Colombo on infusion phlebitis. Proceedings of the Scientific Sessions. 2016.

[24] Gunasundram S, Tan M, Lim KZ, Loh VM. Reducing the incidence of phlebitis in medical adult inpatients with peripheral venous catheter care bundle: a best practice implementation project. JBI Evidence Implementation. 2021 Mar; 19(1): 68-83. doi: 10.1097/XEB.0000000000000245.