

**RESEARCH PAPER****Assessment of Nurses' Knowledge and Practices Regarding Chemotherapy-Induced Peripheral Neuropathy among Cancer Patients in a Tertiary Care Hospital, Lahore****<sup>1</sup>Sehrish Saba, <sup>2</sup>Fahima Ashraf and <sup>3</sup>Sadia Rizwan**

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**\*Corresponding Author** [sehrishsaba108@gmail.com](mailto:sehrishsaba108@gmail.com)**ABSTRACT**

This study aims to assess the knowledge and practices of nurses regarding CIPN among cancer patients in a Tertiary Care Hospital, Lahore. Chemotherapy-Induced Peripheral Neuropathy (CIPN) is a common and debilitating side effect experienced by cancer patients undergoing chemotherapy. The study investigate the current understanding of CIPN among nurses, identify potential gaps in knowledge, and explore the existing practices for prevention, assessment, and management of CIPN. The target population was registered nurses working in oncology units with direct involvement in the care of cancer patients undergoing chemotherapy. A sample size of 80 was determined. Convenient sampling technique was utilized for participant selection. The study was conducted in oncology departments and chemotherapy units. Among the 80 participants, 32% were male nurse, and 48% were female nurses. About 57(71.25%) participants had poor knowledge regarding CIPN. Majority of participants 58(72.5%) had incompetent practices. It is concluded that majority of Registered Nurses who participated in research had poor knowledge and incompetent practices regarding CIPN. The findings revealed that areas where additional training and education are needed.

**Keywords:** Chemotherapy, Knowledge, Neuropathy and Cancer, Nurses, Practices**Introduction**

In the dynamic landscape of cancer care, chemotherapy remains a cornerstone in the treatment of various malignancies. However, this therapeutic approach is not without its challenges, and one significant complication that has garnered increasing attention is Chemotherapy-Induced Peripheral Neuropathy (CIPN). CIPN is a debilitating side effect characterized by damage to the peripheral nerves, leading to sensory and motor deficits that significantly impact the quality of life of cancer patients (Desforges et al., 2022).

While considerable research has focused on understanding the pathophysiology and management of CIPN, the role of nurses in mitigating its impact through knowledge and practices is a critical aspect that warrants thorough investigation. Nurses, as frontline healthcare providers, play a pivotal role in patient care, education, and support throughout the cancer treatment journey. Their understanding of CIPN, along with the implementation of evidence-based practices, is crucial for early detection, effective management, and improved patient outcomes (Mezzanotte et al., 2022).

This study aims to assess the current state of nurses' knowledge and practices regarding CIPN among cancer patients. By examining recent literature, this research seeks to identify gaps in nurses' awareness and application of evidence-based interventions, shedding light on areas that require further education and training. As the field of oncology nursing evolves, staying abreast of the latest advancements in CIPN management is essential to enhance the overall quality of patient care (Kim & Johnson, 2017). The assessment will

encompass various dimensions, including nurses' understanding of CIPN risk factors, symptoms, preventive measures, and available interventions. Additionally, the study will explore the challenges faced by nurses in incorporating the latest evidence into their daily practice and propose recommendations for educational interventions to bridge the identified gaps (Cioroiu & Weimer, 2017).

In a nutshell, understanding the current landscape of nurses' knowledge and practices regarding CIPN is integral for improving patient care outcomes in oncology. This research will contribute valuable insights to the ongoing dialogue on enhancing the role of nurses in the comprehensive care of cancer patients, with implications for refining education programs and promoting evidence-based practices in the field of oncology nursing (Sałat, 2020).

## **Literature Review**

This literature review aims to explore and analyze studies conducted between 2019 and 2024 that investigate nurses' knowledge and practices related to CIPN among cancer patients. Chemotherapy-induced peripheral neuropathy (CIPN) is a common and debilitating side effect of cancer treatment, affecting the peripheral nerves and leading to sensory and motor dysfunction. Nurses play a crucial role in the care of cancer patients undergoing chemotherapy, and their knowledge and practices regarding CIPN are essential for early detection, prevention, and management of this condition.

## **Nurses' Knowledge Regarding CIPN**

Recent studies have emphasized the importance of using standardized assessment tools and screening protocols for early detection of CIPN. Research by (Ferrier, Pereira, Buserrolles, Authier, & Balayssac, 2013) highlights the need for nurses to be well-versed in these tools to accurately identify CIPN symptoms. Understanding the etiology and risk factors associated with CIPN is crucial for nurses in providing personalized care. Investigations by (Burgess et al., 2021) stress the significance of ongoing education programs for nurses to stay updated on the latest research regarding CIPN risk factors.

## **Patient Education**

Effective communication between nurses and patients is essential for educating patients about CIPN symptoms and self-management strategies. Recent studies by (Zhang, 2021) underscore the importance of nurses' knowledge in promoting patient engagement and adherence to recommended interventions.

## **Nurses' Practices Regarding CIPN and Implementation of Preventive Measures:**

Proactive measures can significantly mitigate the impact of CIPN. Research by (Jones, Wechsler, Zulewski, & Wood, 2022) explores the implementation of preventive measures by nurses, such as dose modifications and alternative treatment options, to minimize the risk and severity of CIPN.

## **Multidisciplinary Collaboration**

Collaboration between nurses and other healthcare professionals is essential for comprehensive CIPN management. Studies by (Desforges et al., 2022) emphasize the need for interdisciplinary teamwork to address CIPN from various perspectives, enhancing patient outcomes. Accurate documentation of CIPN symptoms and regular follow-up assessments are critical components of nursing practices. The study by (Tan et al., 2019) discusses the significance of thorough record-keeping and continuous monitoring to track the progression of CIPN and adjust interventions accordingly. Despite the advancements in

research and healthcare practices, challenges persist in ensuring uniform knowledge and practices among nurses regarding CIPN. Issues such as time constraints, workload, and variations in educational backgrounds may impact the consistency of care.

### Material and Methods

A descriptive cross-sectional study design was employed for this research, conducted at the oncology departments and chemotherapy units of a tertiary care Hospital Lahore, Pakistan. Data collection took place from January 20th, 2023, to June 21st, 2023, involving diabetic patients. A sample size of 80 was determined with a 95% confidence interval and a 5% margin of error. Convenient sampling technique was utilized for participant selection. The study encompassed male and female Nurses falling within the age range of 25 to 45 years. Exclusions from the study were made for Head Nurses and Nursing interns. In accordance with the established inclusion and exclusion criteria, participants meeting the study's eligibility requirements were recruited upon securing informed consent. Prior to participation, participants were thoroughly briefed on the study's objectives, potential risks, and anticipated benefits. In a thorough effort to establish rapport with the participants, informed consent was acquired. A structured knowledge assessment tool and practice checklist was used to collect data from participants. Following data collection, the analysis was performed using the Statistical Package for the Social Sciences (SPSS) Version 24. Quantitative variables were succinctly presented in frequencies and percentages to facilitate a clear representation.

### Results and Discussion

This results section represents the analysis, interpretation and comparison of data related to demographic variables, the study variables knowledge and practices regarding CIPN.

**Table 1**  
**Demographic Characteristics of Participants**

Demographic characteristics	Frequency	Percentage
<b>Age</b>		
25-30 years	24	30%
31-35 years	25	31.24%
36- 40 years	15	18.75%
40-45 years	16	20%
<b>Gender</b>		
Male	32	40%
Female	48	60%
<b>Qualification</b>		
Diploma Nurse	35	43.75%
Generic BSN	25	31.25%
Post RN BScN	20	25%
<b>Work Experience</b>		
>1 year	20	25%
5 years	30	37.5%
6-10 years	20	25%
>10 years	10	12.5%

Table 1 provides a comprehensive overview of the study participants, totaling 80 individuals. The majority of participants, constituting 31.24%, fell within the age range of 31-35 years, while 25-30 years were 30%, and 20% were between 40-45 years old. Among the 80 participants, 40% were male, and 60% were female. Examining the educational background of the respondents, the data revealed that 43.75% had diploma in Nursing,

Generic BSN, 31.25% and 25%, participants had Post RN BScN degree. This information provides a coherent snapshot of the demographic distribution within the study participants.

**Table 2**  
**Knowledge of participants regarding Chemotherapy Induced Peripheral Neuropathy**

Level of Knowledge	Frequency	Percentage	Valid Percent	Cumulative Percent
Poor Knowledge	57	71.25%	71.25%	71.25%
Good Knowledge	23	28.75%	28.75%	100.0

Table 2 showed that 57(71.25%) participants had poor knowledge and 23 (28.75%) had good knowledge regarding Chemotherapy Induced peripheral Neuropathy.

**Table 3**  
**Practices of participants regarding Chemotherapy Induced Peripheral Neuropathy**

Level of Practice	Frequency	Percentage	Valid Percent	Cumulative Percent
Incompetent Practices	58	(72.5%)	(72.5%)	(72.5%)
Competent Practices	22	27.5%	27.5%	100.0

Table 3 summarizes the distribution of participants based on their levels of practice: "Incompetent" (72.5%) and "Competent" (27.5%) out of a total of 80 respondents. The majority falls into the "Incompetent" category, providing a concise overview of the participants' practice levels.

## Discussion

Chemotherapy-induced peripheral neuropathy (CIPN) is a common and distressing side effect experienced by cancer patients undergoing chemotherapy. This condition not only affects the quality of life for patients but also poses a significant challenge for healthcare professionals, particularly nurses who play a crucial role in the care of cancer patients. This discussion explores the assessment of nurses' knowledge and practices concerning CIPN among cancer patients, emphasizing the importance of understanding and addressing this issue in the clinical setting.

The current study demographics were male nurses just 40% and age of participants from ages between 25-30 years of were 40% which is contrary to the study (Mohammed, Kumait, Shakoor, & Othman, 2021), which revealed that (31.4 percent) of the sample was between the ages of (25-30 years) and that (52.1 percent) of the sample was male. Another study in which 70% of the study group at age (20-29) years, 50% of them were males and females, while it contrary with our study in which male Nurses were just 8.1% while 91.9% were females (Mardan & Mohammed, 2019).

Regarding to gender, there is an equal number between male and female. These findings supported by a study conducted in Iraq, which found that male and female that show equal number (male= 50% and female= 50%) (Nasser & Hassoun, 2020). But, these findings unsupported by a study conducted for improving the quality of nursing care for patients with leukemia which found that females nurses' more than males at oncology.

In a quasi-experiment study participants had low level of knowledge at pretest the grand mean was (1.25) and at posttest the level of knowledge improve to moderate level (1.6) after implementation of an educational program, which agreed with study where 49.4% nurses' have fair knowledge (Mardan & Mohammed, 2019). About 50-74 percent of

nurses have adequate knowledge of chemotherapy induced neuropathy risk factors, indicating a knowledge-practice gap. However, screening is not routinely attempted, indicating a knowledge-practice gap. The results of this study indicated that nurses had high confidence in their ability to perform deep tendon reflexes, tuning-fork vibration, and the Romberg test but only moderate confidence in their ability to evaluate muscle strength. Indicating the absence of best practices for the integration of knowledge into practice (Schmidt, 2015).

The knowledge of nurses in this study is poor, which helped the development of chemotherapy induced peripheral neuropathy (CIPN) in oncology patients; the present study results conflict with the study of Qalawa (2017), who studied nursing knowledge, practice patterns, and learning preferences regarding chemotherapy-induced peripheral neuropathy and found that nurses in the survey lacked knowledge regarding the neurotoxicity of specific agents, evidence-based treatments and assessment of chemotherapy induced peripheral neuropathy (CIPN) patients.

### **Conclusion**

The study concluded that majority of registered Nurses almost two third (71.25%) registered Nurses had poor knowledge about Chemotherapy. Similarly, practices of majority of registered Nurses were incompetent. There is a need to improve the knowledge and practices of registered Nurses regarding Chemotherapy Induced Peripheral Neuropathy.

### **Recommendations**

**Comprehensive Training Programs:** Develop and implement comprehensive training programs for nurses focused on chemotherapy-induced peripheral neuropathy (CIPN). These programs should cover the pathophysiology, risk factors, prevention strategies, and management of CIPN. Emphasize the importance of ongoing education to keep nurses updated on the latest research and advancements in the field.

**Incorporate CIPN in Nursing Curricula:** Collaborate with nursing education institutions to integrate CIPN content into the curricula. Ensure that nursing students receive thorough education on the identification, assessment, and management of CIPN, preparing them with the necessary knowledge and skills to address this common chemotherapy side effect.

**Regular Workshops and Seminars:** Conduct regular workshops and seminars specifically addressing CIPN.

**Simulation Training:** Implement simulation training sessions to allow nurses to practice assessing and managing CIPN scenarios. Simulation can help build confidence, improve decision-making skills, and ensure that nurses are adequately prepared to handle real-life situations involving cancer patients experiencing CIPN.

**Establish Protocols and Guidelines:** Develop and disseminate clear and standardized protocols and guidelines for the assessment and management of CIPN.

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