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KNOWLEDGE, ATTITUDES, AND PRACTICES OF NURSING STUDENTS TOWARD PERIPHERAL NERVE INJURY REHABILITATION

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Abstract

Aim: *This study aimed to assess nursing students' knowledge, attitudes, and practices regarding peripheral nerve injury (PNI) rehabilitation in selected nursing colleges in Lahore.*

Methodology: *A descriptive cross-sectional study was conducted over six months among 250 nursing students. Information was collected through an adapted questionnaire covering participant characteristics, knowledge, attitudes, and rehabilitation-related practices. The study report describes the recruitment as both convenience sampling and total enumeration; this difference should be checked against the approved study protocol. Findings are presented mainly as frequencies and percentages.*

Results: *The largest age group was 20–24 years (37.6%), and 51.6% of participants were female. Nearly two-thirds (64.8%) had not attended previous training on PNI rehabilitation. Knowledge varied by topic: 23.6% were classified as proficient in peripheral nerve structure and distribution, while 60.4% were unaware of early therapeutic interventions during the first 24–48 hours. Attitudes were generally positive, with 72.4% agreeing or strongly agreeing that rehabilitation should be prioritized and 72.8% willing to pursue formal training. Reported practices included patient assessment, health education, and monitoring, although participation in formal training was less consistent.*

Conclusion: *Participants generally valued rehabilitation and reported involvement in relevant nursing practices, but important knowledge gaps remained, particularly in early interventions and selected diagnostic methods. Focused teaching, practical learning opportunities, and continuing education may help strengthen preparation for PNI rehabilitation.*

INTRODUCTION:

Peripheral nerve injuries can affect movement, sensation, coordination, and, in some cases, autonomic functions. Depending on the nerve involved and the severity of the injury, a patient may experience weakness, numbness, pain, reduced hand or limb function, and difficulty carrying out everyday activities. These problems may follow road traffic accidents, falls, workplace incidents, sports injuries, or surgical complications. Recovery is not always complete after the initial medical treatment and may

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require ongoing rehabilitation and follow-up (Heinzel et al., 2021; Belova et al., 2025).

Rehabilitation aims to help patients regain function, manage symptoms, prevent secondary complications, and maintain as much independence as possible. It often involves several professionals, including nurses, physicians, physiotherapists, and occupational therapists. Nurses have regular contact with patients and can contribute by observing changes in physical condition, supporting pain management, explaining care plans, encouraging safe participation in rehabilitation, and educating patients and families. Nursing is therefore an important part of coordinated rehabilitation services (Gutenbrunner et al., 2022; Aldosary et al., 2024).

For these responsibilities, nursing students need more than general awareness of injury. They should understand common complications, the purpose and timing of rehabilitation, and the role of assessment and diagnostic procedures. They also need a positive attitude toward rehabilitation and opportunities to practise relevant skills under supervision. Research discussed in the source study points to the importance of multidisciplinary rehabilitation, clinical exposure, and education that connects classroom knowledge with patient care.

There is a need to understand how prepared nursing students are for this area of care in local educational settings. Assessing their knowledge, attitudes, and practices can help identify subjects that may require greater attention in teaching and clinical placements. The present study therefore assessed these areas among nursing students from selected colleges in Lahore.

Methodology:

Study design and setting:

A descriptive cross-sectional design was used. The study was conducted in different nursing colleges in Lahore, Pakistan, and the reported duration was six months.

Population and sampling:

The target population comprised male and female nursing students from the first through fourth years. The research report identifies 250 eligible students as the accessible population. It describes a total-enumeration approach in which all eligible students were approached, but another section labels the sampling technique as convenience sampling. Because these descriptions are not identical, the final sampling method should be confirmed from the approved protocol before journal submission.

Data collection and analysis:

Data were collected using an adapted questionnaire addressing knowledge, attitudes, practices, and demographic characteristics related to PNI rehabilitation. The source document does not provide enough information to reproduce all questionnaire items or the full scoring procedure in this article. Data were entered into SPSS and summarized using descriptive statistics, primarily frequencies and percentages. No inferential comparisons are reported here because the available results do not provide the required test statistics.

Ethical considerations:

According to the research report, institutional ethical approval was obtained before data collection and permission was secured from participating colleges. Students were informed about the study, participation was voluntary, and confidentiality was maintained. The ethics committee name and approval/reference number should be added if required by the target journal and available in the original records.

Results:

A total of 250 participants were included in the study. The largest age group was 20–24 years (37.6%), followed by 25–29 years (33.2%) and 30–35 years (29.2%). Females made up 51.6% of the sample. BSN (Generic) students represented 40.8%, while 30.0% had Post RN qualifications and 29.2% held a Diploma in General Nursing. Most participants were unmarried (65.2%), and

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64.8% reported that they had not previously attended training in PNI rehabilitation.

Table 1. Sociodemographic characteristics of participants (N = 250)

Characteristic	Category	n (%)
Age	20–24 years	94 (37.6%)
Age	25–29 years	83 (33.2%)
Age	30–35 years	73 (29.2%)
Gender	Male	121 (48.4%)
Gender	Female	129 (51.6%)
Qualification	Diploma in General Nursing	73 (29.2%)
Qualification	Post RN	75 (30.0%)
Qualification	BSN (Generic)	102 (40.8%)
Marital status	Married	87 (34.8%)
Marital status	Unmarried	163 (65.2%)
Previous PNI rehabilitation training	No	162 (64.8%)

Knowledge scores were not uniform across the topics assessed. Peripheral nerve structure and distribution had the highest proportion of proficient responses (23.6%), although 44.0% of participants were classified as unaware in this area. For complications of PNI, 59.2% were familiar with the topic, while 6.0% were proficient. The most prominent gap was in early therapeutic interventions within 24–48 hours of injury: 60.4% were classified as unaware, 26.8% as familiar, and 12.8% as proficient. The study also identified gaps related to electromyography and the goals of early-phase rehabilitation.

Table 2. Selected knowledge findings

Knowledge domain	Unaware n (%)	Familiar n (%)	Proficient n (%)
Peripheral nerve structure/distribution	110 (44.0%)	81 (32.4%)	59 (23.6%)
Complications of PNI	87 (34.8%)	148 (59.2%)	15 (6.0%)
Clinical presentation	89 (35.6%)	131 (52.4%)	30 (12.0%)
Early interventions within 24–48 hours	151 (60.4%)	67 (26.8%)	32 (12.8%)

Attitudes toward rehabilitation were generally favourable. A total of 181 participants (72.4%) agreed or strongly agreed that rehabilitation should be prioritized. Similarly, 177 (70.8%) felt that their knowledge matched clinical requirements, and 182 (72.8%) expressed willingness to pursue formal training. In practice, 60.0% reported that they always or often sought information about PNI rehabilitation. The source report also records regular comprehensive patient assessments among 81.2% of respondents, health education among 73.2%, and monitoring of patients' health status among 67.6%. However, only 26.4% reported that they always enrolled in training courses.

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Table 3. Selected attitude and practice findings

Item	Response grouping	n (%)
Prioritize rehabilitation	Agree/strongly agree	181 (72.4%)
Knowledge matches clinical requirements	Agree/strongly agree	177 (70.8%)
Willingness to pursue formal training	Agree/strongly agree	182 (72.8%)
Seek information about PNI rehabilitation	Always/often	150 (60.0%)
Conduct comprehensive patient assessments	Reported regularly	203 (81.2%)
Provide health education	Reported regularly	183 (73.2%)
Monitor patient health status	Always/often	169 (67.6%)
Enroll in training courses	Always	66 (26.4%)

Discussion:

This study assessed knowledge, attitudes, and practices related to PNI rehabilitation among 250 nursing students from selected colleges in Lahore. The participant profile included students across three age groups, with a slight majority of female respondents. One finding relevant to education was that almost two-thirds had not attended previous PNI rehabilitation training. This suggests that the topic may not have been covered through a dedicated training opportunity for many participants, although the study did not test the curriculum of each participating institution.

Knowledge varied considerably by topic. Some participants were familiar with complications and clinical presentation, but fewer were classified as proficient in these areas. The clearest gap related to early therapeutic interventions during the first 24–48 hours after injury. This is an important area for learning because early recognition, appropriate assessment, and timely coordination with the wider clinical team can influence the care pathway. The responses concerning electromyography and early rehabilitation goals also indicate that students may benefit from clearer explanations of diagnostic methods and the purpose of rehabilitation at different stages of recovery.

The results should not be interpreted as showing that all participants lacked knowledge. Rather, they point to uneven understanding across different subjects. The study by Li et al. (2024), cited in the source research, also addresses knowledge, attitudes, and practices concerning PNI rehabilitation among healthcare professionals. Literature on rehabilitation methods and peripheral nerve injuries further emphasizes that recovery can involve multiple interventions and professional roles (Belova et al., 2025; Heinzel et al., 2021). The present findings add a local descriptive picture of nursing students' reported preparedness, but further research using a clearly described instrument would be needed to compare scores directly across settings.

Attitudes were more encouraging than some of the knowledge results. More than seven in ten respondents supported prioritizing rehabilitation and expressed willingness to pursue formal training. Positive attitudes can provide a useful starting point for education, but confidence that one's knowledge meets clinical requirements should not be treated as proof of competence. The gap between favourable self-assessment and topic-specific knowledge responses supports the value of practical assessment and supervised learning, rather than relying on confidence alone.

Participants also reported carrying out several rehabilitation-related practices, including assessment, health education, and monitoring. These activities are consistent with the nursing

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role in helping patients and families understand care, recognizing changes, and supporting ongoing recovery. However, the results were self-reported and do not independently establish the quality of practice observed in clinical settings. Formal training was less consistent: only 26.4% said they always enrolled in training courses. This difference suggests that willingness to learn may not always translate into regular participation in structured learning opportunities.

The findings have practical implications for nursing education in Lahore. Teaching on PNI rehabilitation could include the basic structure and function of peripheral nerves, common complications, early rehabilitation priorities, assessment, and the role of diagnostic tools. Case-based discussion and simulation could allow students to practise patient assessment, communication, documentation, and referral decisions in a supervised environment. Clinical placements that expose students to multidisciplinary rehabilitation teams may also help connect theoretical knowledge with the patient's day-to-day needs. These suggestions should be considered educational implications of the descriptive findings, not interventions tested by this study.

Conclusion:

The study found uneven knowledge of peripheral nerve injury rehabilitation among nursing students in selected colleges in Lahore. The largest reported gap concerned early therapeutic interventions within 24–48 hours, while knowledge of electromyography and early-phase rehabilitation goals also required attention. At the same time, most participants expressed positive attitudes toward rehabilitation and many reported involvement in assessment, patient education, and monitoring. Focused curriculum content, supervised practical experience, and accessible continuing education may help strengthen students' preparation for rehabilitation-related nursing care.

Limitations of the Study:

The findings represent students from selected nursing colleges in Lahore and may not apply to all nursing students in Pakistan. The cross-sectional design describes responses at one point in time and cannot establish cause and effect. Knowledge, attitudes, and practices were assessed through questionnaire responses, which may be affected by recall or social desirability bias. The source report also uses both convenience sampling and total enumeration to describe recruitment; this should be clarified. Full details of questionnaire validation and reliability were not available in the material used to prepare this article.

Recommendations:

Based on the findings, nursing institutions may consider the following actions:

- Include a focused teaching unit on peripheral nerve injury rehabilitation, especially early interventions, common complications, rehabilitation goals, and diagnostic methods such as electromyography.
- Use case-based learning and simulation to practise assessment, patient and family education, monitoring, and appropriate communication with the rehabilitation team.
- Provide supervised clinical exposure to rehabilitation services and encourage students to attend relevant workshops or continuing-education sessions.
- Conduct further studies across more institutions and regions, with a clearly documented sampling method and a fully described, validated questionnaire.
- Where feasible, assess learning before and after training and include observed skills, rather than relying only on self-reported confidence or practice.

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