JHWCR JOURNAL OF HEALTH, WELLNESS AND COMMUNITY RESEARCH 3007-0570

https://doi.org/10.61919/pp1gqb02

Original Article

Understanding Patient's Experiences of Post-Spinal Headache after Lumbar Puncture: A Qualitative Descriptive Exploratory Study

Fazal Rahim[1*], Tariq Jamil[2], Shaheer Ahmad[3], Abid Ur Rehman[4], Hina[5]

[1-5] Rufaidah Nursing College, Peshawar (Project of Prime Foundation Pakistan affiliated with Riphah International University Islamabad), Peshawar campus, Pakistan

*** Corresponding author: Fazal Rahim, fzafridi5@gmail.com**

ABSTRACT

Background: PLPH is a typical consequence of lumbar puncture procedure, causing both physical and mental anguish. This diagnostic procedure is carried out for CSF examination to identify CNS infections such as meningitis, immunological infections like Lyme disease, subarachnoid hemorrhage, epidural analgesia, and interventional neuro-axial procedure for spinal anesthesia. Qualified nurses provides a major role in the preventive measures of post-spinal puncture headache. Aim: The study aims was to examine patients' experiences with post-spinal puncture headache including the type, the effect, and management of headache, and identify gaps in nursing care.

Materials and Methods: A qualitative descriptive exploratory research was conducted from May 2024 to May 2025 in Peshawar tertiary hospitals approved by IRB of Prime Foundation Pakistan at Peshawar Medical College included 15 participants (10 males, 5 females) who had encountered PLPH. Semi-structure interviews were used to gathered detailed information. Data was evaluated using Braun and Clarke's (2006) modified by SAGE (2022) thematic analysis six step to identify common pattern and themes.

Results: The study found three major themes included (1) Acute physical challenges, including throbbing pain, nausea and vomiting, and neck stiffness, (2) emotional and psychological challenges, and (3) coping mechanisms, about the severity, duration, and emotional effect of PLPH. Participant reported considerable disruptions in their regular routine, and employment. Many people were frustrated by the lack of alleviation, and knowledge about PLPH's administration. Despite numerous coping measures such as hydration, and pain medication, the majority of patients had persistent agony. Coping methods were viewed inadequate for long term management of patients, with many individuals reporting's feelings of powerlessness. In addition, communication breakdown between healthcare personal especially nurses and patients were a major problems, underlining the need for effective patient education regarding the symptoms, and recovery schedule.

Conclusion/Recommendations: The study found that PLPH had a significant detrimental influence on patient's physical, and emotional well-being. Healthcare practitioners and nurses should increase patient's education and offer more effective pain treatment options. Future suggestions include providing extensive follow-up treatment, improving nurse-patient communication about possible consequences, implemented tailored therapies to reduce PLPH symptoms, longitudinal study or mixed method, determining prevalence of headache in Peshawar, sterilization protocols and large sample size approach for generalizability of the study. Keywords: Spinal punctures, Headache, Epidural, Meningitis, CNS infection, Nursing care

"Cite this Article" | Received: 03 September 2025; Accepted: 12 January 2026; Published: 11 March 2026.

Author Contributions: The authors sincerely acknowledge the valuable contribution of the patients who willingly participated in the study and shared their experiences. Only patients' contribution applicable in the study due to which gathering of data possible without any barriers **Ethical Approval:** Ethical approval for this study was undertaken from the (IRB) of Peshawar Medical College approved number (Prime/IRB/2024-1113) on the 14th day of September 2024. Informed Consent: Written informed consent was obtained from all participants; Conflict of Interest: The authors declare no conflict of interest; Funding: No external funding; Data Availability: Available from the corresponding author on reasonable request; Acknowledgments: N/A.

INTRODUCTION

Lumbar puncture is a routinely performed diagnostic and therapeutic procedure used to obtain cerebrospinal fluid for the evaluation of central nervous system infections, inflammatory and immunological disorders, subarachnoid hemorrhage, and selected neurologic or anesthetic interventions. In clinical practice, the procedure is also undertaken as part of spinal anesthesia, epidural-related care, and other neuraxial approaches, making it relevant across acute, medical, neurologic, and perioperative settings. Although lumbar puncture is generally considered safe, it is not free of complications, and post-dural puncture headache remains one of its most common and distressing adverse outcomes. This complication has direct implications not only for symptom burden and recovery, but also for patient satisfaction, mobility, functional independence, and the quality of nursing support required after the procedure (1,2).

Post-dural puncture headache typically develops after leakage of cerebrospinal fluid through the dural puncture site, resulting in reduced cerebrospinal fluid volume and pressure with subsequent traction on pain-sensitive intracranial structures and compensatory intracranial vasodilation. Clinically, it is classically described as a postural headache that worsens in the upright position and improves on lying down, often accompanied by nausea, neck stiffness, photophobia, tinnitus, hypoacusia, or dizziness. Symptoms usually emerge within the first few days after the procedure and often resolve spontaneously within one week, although the severity and duration can vary substantially between patients. Contemporary evidence-based guidance has emphasized that post-dural puncture headache should not be viewed as a minor, self-limiting complaint alone, because in some patients it causes substantial suffering, prolonged recovery, and increased healthcare utilization, particularly when recognition or management is delayed (2,3).

The occurrence of post-dural puncture headache is influenced by both procedural and patient-related factors. Prior literature has shown that needle design, gauge, bevel type, and procedural technique all affect risk, with atraumatic pencil-point needles generally associated with lower incidence than cutting needles. Meta-analytic and randomized evidence has demonstrated that finer cutting needles are associated with lower headache risk than larger cutting needles, while pencil-point needles and atraumatic designs are generally preferred because they reduce dural trauma and subsequent cerebrospinal fluid leakage. Specific comparisons, such as Sprotte versus Quincke needles, further support the role of atraumatic needle selection in prevention. Fluoroscopic and technical reviews also reinforce that proper procedural technique and equipment choice are clinically relevant to post-procedural outcomes. At the same time, treatment-focused reviews note that although hydration, caffeine, analgesia, and conservative measures may provide symptomatic relief, these strategies are not uniformly effective, and some patients continue to experience persistent discomfort despite routine care (5,6,9,11,12).

Patient characteristics also shape vulnerability to this complication. Previous studies have reported increased risk in younger adults, particularly women, individuals with lower body mass index, and obstetric populations, while clinical characterization studies have described bilateral frontal or occipital pain as common symptom patterns. Prospective and observational research further indicates that the incidence and presentation of post-dural puncture headache are heterogeneous across populations and settings, depending on indications for lumbar puncture, procedural expertise, and preventive practices. Importantly, the burden of this complication is not limited to pain intensity alone; it may interrupt sleep, delay ambulation, reduce the ability to work or perform family roles, and amplify fear about the procedure and its consequences. Such variation suggests that the clinical meaning of post-dural puncture headache cannot be fully understood through incidence statistics or procedural risk estimates alone

Despite the considerable biomedical literature on risk factors, pathophysiology, and management, an important gap remains in understanding how patients themselves experience post-lumbar puncture headache in real-world hospital settings. Existing studies have largely focused on procedural predictors, needle characteristics, or quantitative estimates of incidence and treatment response, while comparatively less attention has been given to the lived symptom experience, the emotional and psychological impact of ongoing headache, and the adequacy of communication and support provided by healthcare professionals, especially nurses. This gap is clinically important because nurses are central to monitoring patients after lumbar puncture, identifying symptom progression, providing reassurance, reinforcing positioning and hydration advice, and educating patients about expected recovery and warning signs. When patient experience is insufficiently explored, opportunities may be missed to improve anticipatory guidance, symptom management, follow-up care, and nurse-patient communication

The need for a qualitative inquiry is further supported by methodological literature showing that qualitative descriptive approaches are particularly appropriate when the aim is to obtain a direct, practice-relevant account of patients' experiences, perceptions, and care needs in healthcare settings. Such approaches are useful when researchers seek to remain close to participants' own words while generating findings that can inform clinical care, service delivery, and patient education.

In the context of post-lumbar puncture headache, this design is well suited to capturing how symptoms begin, how they are interpreted by patients, how they affect every day functioning, which coping mechanisms are attempted, and where gaps in professional support may exist from the patient perspective.

Thematic analysis provides a systematic framework for identifying patterned meanings across narratives while preserving the complexity of individual accounts, thereby allowing clinically actionable themes to emerge from participants' descriptions (16,17,18).

Within Pakistan, and particularly in tertiary care environments where lumbar puncture is regularly performed, there is limited published qualitative evidence on how patients perceive and manage post-lumbar puncture headache and how nursing care is experienced during recovery.

This local evidence gap justifies the present study because symptom interpretation, coping strategies, and expectations of professional care are shaped by healthcare context, communication practices, and available support systems. A better understanding of these experiences may help clinicians and nurses move beyond purely procedural prevention toward more patient-centered post-procedural care that addresses both physical discomfort and emotional distress.

The present study was therefore undertaken to explore patients' experiences of post-lumbar puncture headache in tertiary hospitals in Peshawar, with particular attention to the nature and effects of headache, the strategies used for symptom management, and perceived gaps in nursing care.

The study was guided by the objective of answering the following research question: how do patients experience post-lumbar puncture headache after lumbar puncture, and what do their accounts reveal about symptom burden, coping practices, and opportunities to improve nursing support and patient education (16,19,20).

METHODS

A qualitative descriptive exploratory study design was employed to obtain an in-depth understanding of patients' experiences following lumbar puncture, with particular emphasis on post–lumbar puncture headache and related physical, emotional, and coping responses. This design was selected because qualitative descriptive approaches are well suited to capturing patients' perceptions and experiences in healthcare contexts where the objective is to generate practice-oriented insights rather than theory development.

The approach allows researchers to remain close to participants' own narratives while systematically identifying patterns in experiences that can inform clinical care and nursing practice. The study followed established qualitative reporting and methodological principles recommended for health research using qualitative descriptive methods and thematic analysis to enhance transparency, rigor, and reproducibility (16–18).

The study was conducted in two tertiary care teaching hospitals in Peshawar, Pakistan: Prime Teaching Hospital and Kuwait Teaching Hospital. These institutions serve as major referral centers where lumbar puncture procedures are routinely performed for diagnostic and therapeutic purposes. Data collection occurred between May 2024 and May 2025.

The hospitals provide multidisciplinary neurological, infectious disease, and general medical services, which made them appropriate settings for identifying patients who had recently undergone lumbar puncture and experienced post-procedural symptoms. Recruitment occurred primarily through inpatient wards and outpatient follow-up areas where patients were accessible after the procedure and medically stable to participate in an interview.

Participants were selected using purposive sampling to ensure inclusion of individuals who had direct experience with lumbar puncture and subsequent headache symptoms. Eligible participants were adults who had undergone lumbar puncture for diagnostic or therapeutic purposes in the participating hospitals and who reported experiencing headache symptoms following the procedure consistent with post–lumbar puncture headache.

Participants were required to be clinically stable, able to communicate clearly, and willing to describe their experiences in detail. Individuals with documented chronic headache disorders unrelated to lumbar puncture, cognitive impairment affecting their ability to provide informed responses, or severe medical instability were excluded to minimize confounding interpretations of headache symptoms.

Recruitment continued until thematic data saturation was achieved, defined as the point at which additional interviews did not produce new conceptual information relevant to the study objectives. Saturation occurred at the fourteenth interview, and one additional interview was conducted to confirm stability of the thematic findings, resulting in a final sample of fifteen participants.

Potential participants were identified through clinical records and consultation with attending healthcare staff who confirmed that the patient had undergone lumbar puncture and experienced post-procedural headache symptoms. Eligible individuals were approached by the research team and provided with a detailed explanation of the study purpose, procedures, voluntary nature of participation, and confidentiality safeguards.

Written informed consent was obtained from all participants prior to enrollment. Participants were informed that they could withdraw from the study at any time without affecting their medical care. Interviews were conducted in private areas within the hospital to maintain confidentiality and encourage open discussion of personal experiences.

Data were collected through semi-structured, face-to-face interviews designed to explore participants' experiences with post–lumbar puncture headache. An interview guide was developed based on existing literature on post-dural puncture headache, patient-reported outcomes, and qualitative health research methodology.

The guide included open-ended questions addressing symptom onset and characteristics, perceived severity and duration of headache, associated physical symptoms, emotional responses, coping strategies, and perceptions of healthcare support and communication. Probing questions were used to encourage elaboration and clarify participants' descriptions of their experiences.

Interviews were conducted in the participants' preferred language and lasted approximately 25–45 minutes. With participant permission, interviews were audio-recorded and subsequently transcribed verbatim to ensure accuracy of the data. Transcripts were carefully reviewed against audio recordings to confirm completeness and minimize transcription errors.

The primary variable of interest in this qualitative investigation was the lived experience of post–lumbar puncture headache following lumbar puncture procedures. Operationally, post–lumbar puncture headache was defined as a headache occurring after lumbar puncture that participants attributed to the procedure and described in relation to positional changes or associated symptoms such as nausea, dizziness, or neck stiffness.

Additional experiential variables included perceived symptom trajectory, functional impact on daily activities, psychological responses to the headache, self-management strategies, and perceived adequacy of healthcare support. Demographic information such as participant sex and contextual information related to the clinical procedure were also recorded to support interpretation of the findings.

Several measures were implemented to enhance methodological rigor and minimize potential sources of bias. Purposive sampling ensured that only participants with direct experience of the phenomenon were included. Consistency in data collection was maintained by using a standardized interview guide and by conducting interviews in a similar clinical context.

To reduce researcher bias during analysis, transcripts were reviewed repeatedly and coded systematically using an inductive thematic approach. Emerging codes and themes were discussed among the research team to reach consensus and maintain analytic consistency. An audit trail documenting coding decisions and thematic development was maintained to enhance transparency and reproducibility of the analytic process. These steps align with recommended strategies for ensuring credibility, dependability, and confirmability in qualitative health research (16–18).

Data analysis was performed using thematic analysis following the six-phase framework proposed by Braun and Clarke. This process involved familiarization with the data through repeated reading of transcripts, generation of initial codes, identification of potential themes, review and refinement of themes, definition and naming of final themes, and synthesis of the findings into a coherent narrative. Coding was conducted manually, and themes were derived inductively from the data to ensure that interpretations remained grounded in participants' descriptions rather than predetermined theoretical categories.

Patterns across participants' experiences were examined to identify recurring physical, emotional, and coping-related dimensions of post–lumbar puncture headache. The analytic process emphasized maintaining a close connection between the data and the final thematic interpretations (16).

The sample size of fifteen participants was determined according to the principle of thematic saturation commonly applied in qualitative descriptive research. Methodological literature suggests that in focused qualitative health studies, meaningful thematic patterns can often be identified within relatively small samples when participants share a common clinical experience. Recruitment was therefore continued until no substantially new information emerged from subsequent interviews, confirming adequate saturation for the study objectives (19,20).

Ethical approval for the study was obtained from the Institutional Review Board of Peshawar Medical College under the Prime Foundation Pakistan (Approval number: Prime/IRB/2024-1113, dated 14 September 2024). All procedures were conducted in accordance with ethical principles for research involving human participants.

Confidentiality of participants' identities was ensured through anonymization of interview transcripts and removal of identifying information. Audio recordings and transcripts were securely stored with restricted access limited to the research team. These measures ensured compliance with institutional ethical standards and protected the privacy and rights of participants throughout the research process.

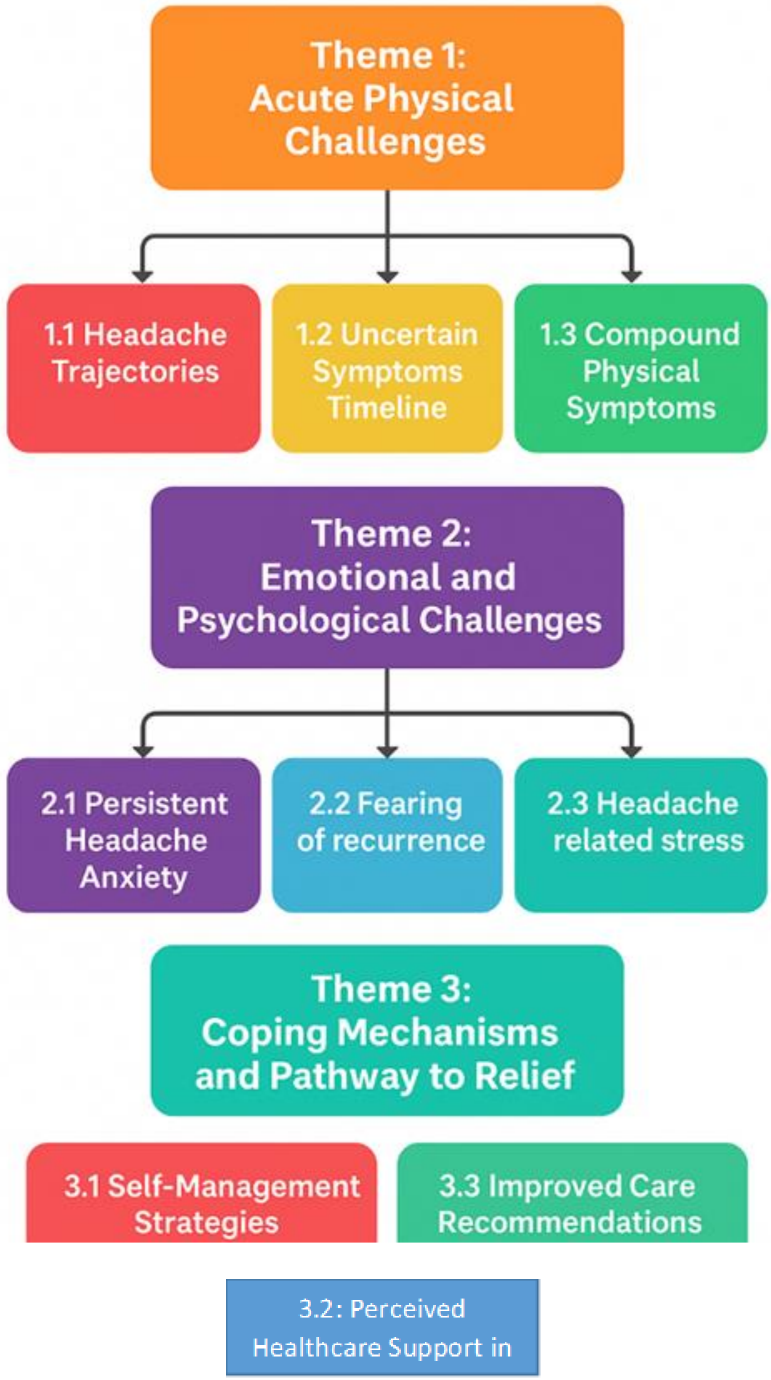

Figure 1.1 Thematic analysis

RESULTS

Theme 1: Acute Physical Challenges

This theme focuses on the physical experiences that patients have after getting a lumbar puncture, including the types, intensity of headache, and other related physical symptoms. It focuses on how the pain appears, when it occurs, and how long it lasted.

Subtheme 1.1: Headache Trajectories:

It describe the features of headache that applicants reported, including location, severity, and type of pain. Patients characterized their headache pattern after lumbar puncture, with many describing intense pain or throbbing headaches in specific regions, such as the forehead or back of the head. For instance, one patient verbalized "A sharp, penetrating headache hit me two days after the procedure for 10 to 15 minutes followed by burden on my heart relieved by Panadol tablet." Another said, "It started at the back of my head, intensity varies, slowly and gradually enveloped my temples and then disappear after two days." Some people reported that the discomfort progressed to their temples or radiated throughout headache, typically worsening while lying down or changing positions. Others had a persistent headache, with some days worse than others. One another viewed," I noticed that the pain worsen each time I tried stand up after lie down or start walking." One describe, "The intensity of the pain would come in waves, some days worse than the others." One participant observed, "It felt me like that there was pressure building inside my skull after one day and stay for four days. The numbness in my foot stay for many days.

Sub-theme 1.2: Uncertain symptoms Timelines:

This sub-theme investigates when and how soon the symptoms started as well as how long they lasted following lumbar-puncture. In terms of onset, and length, several individuals reported that the headache began within a day following the operation, with some experiencing symptoms as early as a few hours later. One code derived were, "The headache crept in about a day after the lumbar puncture." Number two, "Initially, I felt fine, but the next morning I woke in agony." Code three," The symptoms hit me fast, and hard within just few hours." While some people felt discomfort gradually, others were hit with intense agony at once. On the other hand some said that we don't observe any pain after medication administration. One shining example is where participant told, "The discomfort started slowly and intensified over the couple of days but however I do not observe after taking medication." Another reported," I was fine at first and felt mild back pain and headache, but later that night, the headache kicked in out of nowhere."

Sub-theme 1.3: Compound Physical Symptoms:

This sub-theme recognized that participants had additional physical symptom such as neck stiffness, dizziness, and nausea, which were added to their pain. One clear example is, one contributor said, "Along with the headache, my neck become so stiff I barely move." Another stated, "Nausea accompanied the headache, especially when I tried to move." One verbalized, "The pain radiated to my shoulders, making it harder to find comfortable position around." Many said that their back were still uncomfortable around the puncture site. As one derived code, "there was still persistence soreness around the puncture site in my lower back. Another underscored, "Dizziness struck me whenever I attempted to stand up after 30 minutes of LP procedure."

Theme 2: Emotional and Psychological Challenges:

This theme delves at the emotional and psychological responses stimulated by post-lumbar symptoms. It reflects the worry, dread, and emotional anguish that patients suffer as a results of perceiving pain, and the uncertainty of recovery as well as how these sentiments interfere with their personal and social life.

Sub-theme 2.1: Persistent Headache Anxiety:

Many subjected reported substantial worry and dread as a result of the persistence discomfort. They were concerned about consequences from the treatment or the possibility that the headache may never go away. One code revealed, "I could not shake the fear that something had gone wrong with the procedure." Second derived were, "The headache make me anxious about when it would be stopped." Third one, "When the pain was peaked slowly, I felt an overwhelming sense of fear that might never end." It is followed by another one, "The fear exacerbated at night since patients were in vague weather the symptoms may increase." One participant informed, "The thought of sleeping was nerve-wracking, wondering if the pain intensify overnight." Another well-versed," "Not knowing at this time the pain would cease, created a cloud of mental exhaustion this fear"

Sub-theme 2.2: Fearing of recurrence

It explains the psychological aspects that participants experienced due to ongoing discomfort, and their incapacity to manage their symptoms, which left them feeling helpless, and frustrated. Because of the ongoing suffering, some persons experienced emotional exhaustion, which led to feelings of powerlessness, rage, and emotional collapse. Statements from participants were, "I felt powerless, exhausted, and nothing seemed to ease the throbbing headache. Another verbalized, "The unremitting pain left me feeling frustrated and short tempered for a while." One noticed, "It was an incredibly discouraging, not being able to carry on with my daily routine due to left leg pain also initiated after headache." One said, "It badly affected my mental health which was temporally for a short period of time but was very confused, and not knowing how long i have to endure the discomfort."

Sub-theme 2.3: Headache related stress

It covers how the pain interfered with the participants' daily routine, work, family responsibilities, and social lives. It can be explained by one code read, "I struggle to focus on anything with the constant pounding in my head." Another code read, the headache forced me to take time off work after few days of Lumbar puncture when I went to my office, it adding stress to my situation." One participant cognizant, "I had to cancel social plans for few days, which felt me disconnected."

One informed, "Being already bedridden with the disease, the headache was something extra that felt me trapped inside my own body."

Theme 3: Coping Mechanisms and Pathway to Relief:

This topic emphases on how patients deal with the issues caused by symptoms following a lumbar puncture. It discusses the strategies that people employ for self-care, the support, and the guidance they received from medical professionals, and their suggestions for future patients care, and preventive measures.

Sub-theme 3.1: Self-Management Strategies:

It explains the self-care techniques where the participants employed to control their symptoms, included taking over the counter painkillers, using cold packs, lying flat on their backs, and drinking more water. It explained by participants in such away, "During more fluids seemed me to help to reduce the intensity of the headache and another one noted down that lying flat on back gave me some brief moments of relief. Similarly, an Ice pack on the back of my neck helped soothe the effects of my pain temporarily." This is followed by one another participant that taking regular breaks to rest seemed to make me the pain more bearable. However, over the counter medicine for pain also offer me some relief, though not consistently."

Sub-theme 3.2: Perceived Healthcare Support:

It explains how medical professionals may help patient's manage their symptoms by offering advice, comfort, and medication. The support of healthcare professionals play crucial role in coping, and many of the participants appreciated the advice they got. They were given medications to aid with the headaches, also told that they were in normal status, and encouraging to consume coffee to alleviate the headache. One phrase perceived was, "The nurse suggested I should try coffee or caffeine, and surprisingly, it help me a lot." Another factor seen, "I appreciated the regular checked in balance of nursing staff during my recovery." Another one stated, "The doctor assure me that this kind of headache is a common side effect, and no need to worry about. He/she also suggested that don't keep pillow under your head and lie flat" One highlighted, "The advice of nurses on changing positions alleviated the pain proved to be quite helpful." One another stated, "The prescribed medications, and infusions was brought noticeable relief."

Sub-theme 3.3: Improved Care Recommendations

This sub-theme gives the idea about improving therapy included more patients education, follow up care, emotional needs, counseling, and preventive measures to decrease the complication. To clearly illustrate the participants words such as a particular code begins with, "I believe patients should be inform thoroughly informed about the possibility of these headache." Second required, "Clearer instructions about caring after this procedure should be employed." The third code was as followed, "There should be more proactive follow up, especially who suffer more symptoms or intense headache." A few of the participants emphasize on patient education, and implementation of preventive measures included a separated room for injection in back instead in ward areas.

DISCUSSION

The finding of this study align with the existing literature on post-lumber puncture symptoms while also underscore more unique patients experiences that contribute to a more nuanced understanding of the phenomenon. Andrew Farely (2018) et al. describe lumber puncture as a well-established diagnostic and interventional procedure, with post-dural puncture headaches often characterized as throbbing and radiating pain in the frontal or occipital region (1). Similarly, ,our analysis found that participants describe headache in a comparable manner, though some experience sharp, short lived pain while others endured prolonged discomfort. Jose Amorim et bal. (2022) noted that PLPH typically peak within five days and resolve within a week, which is consistent with our findings. However, our study revealed that some patients describe residual discomfort beyond the timeframe, emphasizing the need for individual patient assessment and management strategies (3). The current study findings about the onset and duration of PLPH demonstrate both consistency and variation from prior literature. Vikas Uppal (2023) stated that symptoms typically emerge within a day after the procedure and intensify when the patients assume a standing position. Our participants echoed these experiences, describing worsening of symptoms upon standing or walking consistent with the Monro-Kellie doctrine explanation of compensatory intracranial vasodilation (2). Yet Al Hashel (2022) reported a gradual onset of headaches, whereas our study found that subset of participants experienced an immediate experienced and immediate onset within hours of the procedure, an observation not extensively coved in previous literature (7). Additionally, some individuals did not experience headache at all, suggesting that patient-specific factors may influence post-procedural symptoms manifestation. Similar to previous literature, our findings indicate that bed rest after LP procedure does not effectively reduce the incidence of headache as shown by Cornelius Jacobus (2018) (8). Many participants reported self-care strategies such as hydration, green tea intake, and lying flat, which assist in temporarily relief measures, aligning with established suggestions of Ahmad (2016) (10). Conversely. Healthcare provider's interventions played a crucial role in symptom management as patients expressed appreciation for professional guidance on pain relief measures. While prior research, including Al- Hashel al (2022), emphasized on the role of needle gauge and tip design in reducing headache risk. Our study highlights the psychological distress and emotional impact associated with prolong post-lumber puncture symptoms which is less commonly explored in the literature (7).

Finally, our finding highlights the necessity of patient education, follow-up, and psychological support which have been less emphasized in existing research. Participants advocated for clearer pre-procedure counseling regarding potential headache and post procure care, emphasizing that better preparedness could help mitigate anxiety and emotional distress. While prior research of Adeel Catrillo et al (2015) have focused primarily on physiological aspects of PLPH. Though, our findings suggest a holistic approach incorporationg both physical and psychological support is essential for comprehensive care

(6). These insights contribute to a more patient-centered understanding of lumber puncture outcomes and suggest potential areas for improving post-procedural care strategies

Strength, Limitation and Recommendation:

The study provides a qualitative perspective on post-lumber puncture symptoms, complementing prior quantitative research. It focus on physiological as well as emotional distress. Additionally, it reinforce existing literature while uncovering variations in symptoms onset and persistence. The emphasize on healthcare provider interventions and patient centered care adds practical value to symptoms management strategies. The study has small sample size which may affect generalizability of the study. Additionally, factors such as needle type, insertion techniques, and anatomical difference were not comprehensive analyzed. Future research should include a large sample size for better generalizability. Longitudinal study can offer more insight into long term symptoms progression. Underscore the stipulation of individual therapies, improving pain management procedures, developing patient's education programs, providing systemic follow-up that target both physical and psychological aspects of rehabilitation, and determining prevalence of headache in Peshawar.

CONCLUSION

The study shed light on the significant issues that the patients suffer after lumbar puncture, especially post-lumbar puncture headaches (PLPH). Pain severity and length surfaced as major issues in participant narratives, with several experiencing recurrent headaches that had a substantial impact on their daily life activities. The functional impairment encountered by participant highlights the difficulty of doing fundamental activities throughout the convalescence. In addition, emotional response such as fear and dissatisfaction revealed the psychological impact of PLPH. Future suggestions include providing extensive follow-up treatment, improving nurse-patient communication about possible consequences, implemented tailored therapies to reduce PLPH symptoms, longitudinal study or mixed method, determining prevalence of headache in Peshawar, sterilization protocols and large sample size approach for generalizability of the study.

Author Names	Position	Contribution
Fazal rahim	Registered Nurse & Healthcare researcher	Study conceptualization, study design, supervised, data analysis, drafting and revised manuscript, and final approval for publication.
Tariq jamil	Registered Nurse	Assist in data gathering and interview transcription.
Shaheer Ahmad	Registered Nurse	Assisted in manuscript preparation and thematic analysis
Abid Ur Rehman	Registered Nurse	Assisted in data gathering, pilot study, and ensure accuracy as per ICJME guidelines.
Hina	Registered Nurse	Assisted in critical review, data collection,and final drafting of manuscript

Table 1.1 Authorship roles:

REFERENCES

1. 1. Farley A, Lumbar ME. Procedure with rationale and evidence base. 2018;46–8.
2. 2. Uppal V, Russell R, Sondekoppam R V., Ansari J, Baber Z, Chen Y, et al. Evidence-based clinical practice guidelines on post-dural puncture headache: A consensus report from a multi-society international working group. Reg Anesth Pain Med. 2023;1–31.
3. 3. Amorim JA, Gomes De Barros M V., Valença MM. Post-dural (post-lumbar) puncture headache: Risk factors and clinical features. Cephalalgia. 2022;32(12):916–23.
4. 4. Nasir Z, Mahboob S, Mehmood T, Zaheer Haider S, Naval Ship Shifa Hospital P, Pakistan K. Post Dural Puncture Headache Pak Armed Forces Med. J. 2020;70(4):1188–92.
5. 5. Patel R, Urits I, Orhurhu V, Orhurhu MS, Peck J, Ohuabunwa E, et al. A Comprehensive Update on the Treatment and Management of Postdural Puncture Headache. Curr Pain Headache Rep. 2020;24(6).
6. 6. Castrillo A, Tabernero C, García-Olmos LM, Gil C, Gutiérrez R, Zamora MI, et al. Postdural puncture headache: Impact of needle type, a randomized trial. Spine J. 2015;15(7):1571–6.
7. 7. Al-Hashel J, Rady A, Massoud F, Ismail II. Post-dural puncture headache: a prospective study on incidence, risk factors, and clinical characterization of 285 consecutive procedures. BMC Neurol. 2022;22(1):1–10.
8. 8. Jacobus CH. Does bed rest prevent postlumbar puncture headaches? Ann Emerg Med. 2018;59(2):139–40.
9. 9. Zorrilla-Vaca A, Healy R, Zorrilla-Vaca C. Finer gauge of cutting but not pencil-point needles correlate with lower incidence of post-dural puncture headache: a meta-regression analysis. J Anesth. 2016;30(5):855–63.
10. 10. Ahmed S V., Jayawarna C, Jude E. Post lumbar puncture headache: Diagnosis and management. Postgrad Med J. 2016;82(973):713–6.
11. 11. Özütemiz C, Rykken JB. Lumbar puncture under fluoroscopy guidance: a technical review for radiologists. Diagn Interv Radiol. 2019;25(2):144–56.
12. 12. Sjulstad AS, Odeh F, Baloch FK, Berg DH, Arntzen K, Alstadhaug KB. Occurrence of post-dural puncture headache—A randomized controlled trial comparing 22G Sprotte and Quincke. Brain Behav. 2020;10(12):1–7.
13. 13. Lowery S, Oliver A. Incidence of post-dural puncture headache and backache following diagnostic/therapeutic lumbar puncture using a 22G cutting spinal needle, and after introduction of a 25G pencil point spinal needle. Paediatr Anaesth. 2018;18(3):230–4.
14. 14. Ahmed S V., Jayawarna C, Jude E. Post lumbar puncture headache: Diagnosis and management. Postgrad Med J. 2016;82(973):713–6.
15. 15. Gisore E, Mung'Ayi V, Sharif T. Incidence of post-dural puncture headache following cesarean section under spinal anesthesia at the Aga Khan University Hospital, Nairobi. East Afr Med J. 2016;87(6):227–30.
16. 16. Braun V, Clarke V. Thematic Analysis: A Practical Guide. SAGE; 2021. 377 p.
17. Bradshaw C, Atkinson S, Doody O. Employing a Qualitative Description Approach in Health Care Research. Glob Qual Nurs Res. 2017;4. doi:10.1177/2333393617742282

18. Colorafi KJ, Evans B. Qualitative Descriptive Methods in Health Science Research. Heal Environ Res Des J. 2016;9(4):16-25. doi:10.1177/1937586715614171

19. Sandelowski M. Sample size in qualitative research. Res Nurs Health. 1995;18(2):179-183. doi:10.1002/nur.4770180211

20. Ames H, Glenton C, Lewin S. Purposive sampling in a qualitative evidence synthesis: A worked example from a synthesis on parental perceptions of vaccination communication. BMC Med Res Methodol. 2019;19(1):1-9. doi:10.1186/s12874-019-0665-4

21. Rezac SJ, Salkind NJ, McTavish D, Loether H. Exploring Research. Teach Social. 2015;29(2):257. doi:10.2307/1318732

22. Lee WL, Chinna K, Lim Abdullah K, Zainal Abidin I. The forward-backward and dual-panel translation methods are comparable in producing semantic equivalent versions of a heart quality of life questionnaire. Int J Nurs Pract. 2019;25(1):1-9. doi:10.1111/ijn.12715