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The Unseen Burden of Cardiac Hospitalization: Exploring Hospital-Related Stressors and Psychological Distress Among Patients with Coronary Artery Disease in Pakistan

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ABSTRACT:

Background: Hospitalization following an acute cardiac event is essential for clinical stabilization and treatment. However, unfamiliar surroundings, medical equipment, monitoring alarms, environmental noise, restricted family contact, and uncertainty about the future may contribute to patients' psychological distress. Understanding these experiences is important for developing psychologically supportive cardiac care environments.

Aim: To explore patients' accounts of environmental, interpersonal, and informational experiences associated with psychological distress during cardiac hospitalization.

Methods: A focused secondary qualitative analysis was undertaken using selected interview excerpts from eight participants within an existing qualitative dataset of 20 patients with coronary artery disease in Lahore, Pakistan. The available material consisted of selected English-language quotations concerning hospitalization, monitoring technology, environmental noise, family contact, interactions with healthcare professionals, and concerns about the future. The excerpts were examined through an interpretive thematic approach, informed by established principles of thematic analysis. Four provisional themes were developed. Because complete interview transcripts were unavailable for this analysis, findings were restricted to the meanings supported by the selected quotations.

Results: Four themes were developed: (1) the hospital as an unfamiliar and threatening environment; (2) medical technology, environmental noise, and disrupted psychological comfort; (3) family separation and the need for relational security; and (4) uncertainty about the future and the desire for meaningful communication. Participants described hospital surroundings, monitoring equipment, multiple healthcare professionals, and exposure to other patients' suffering as sources of discomfort. Restricted family contact

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was perceived as an additional source of vulnerability. Participants also expressed a desire for information about their future health and recovery. One participant preferred returning home because of the anxiety associated with the hospital environment.

Conclusion: The psychological experience of cardiac hospitalization extends beyond the clinical consequences of the cardiac event. Environmental conditions, medical technology, family access, and communication may influence patients' perceptions of safety and comfort. Cardiac nursing practice should incorporate environmental orientation, appropriate family involvement, clear communication, and attention to patients' psychological needs.

1. INTRODUCTION

Acute coronary syndrome (ACS), including myocardial infarction (MI), represents a potentially life-threatening cardiovascular event requiring urgent diagnosis, clinical stabilization, and timely treatment. Hospitalization is central to managing these patients and commonly involves continuous cardiac monitoring, pharmacological interventions, invasive procedures, and multidisciplinary care. Although these interventions are essential for preventing complications and improving survival, the hospitalization experience may also expose patients to psychological challenges that extend beyond the immediate effects of their cardiac condition.

A cardiac event can abruptly change patients' perceptions of their health, safety, and future. As they adapt to unfamiliar clinical environments, patients may experience fear, uncertainty, helplessness, and heightened awareness of bodily sensations. Zhao et al. [1], in a qualitative study of patients hospitalized with acute myocardial infarction, identified complex psychological experiences, including helplessness, dependence, fear of death, uncertainty, and concerns about treatment. Their findings emphasized the importance of timely communication and individualized psychological support during hospitalization.

The physical hospital environment may contribute to these experiences. Cardiac care settings contain sophisticated medical equipment, including cardiac monitors, infusion pumps, oxygen delivery systems, and alarm systems. While these devices provide essential clinical surveillance, their unfamiliar appearance and sounds may be interpreted by patients as indicators of serious illness or potential deterioration. Ziebland et al. [2], in a secondary analysis of patients' experiences of myocardial infarction care, reported that cardiac monitoring equipment and unfamiliar clinical surroundings could be intimidating. Their findings emphasized the importance of explaining medical procedures and providing reassurance to patients.

Similarly, Leong et al. [3], in a qualitative study involving critically ill patients and family members in Malaysia, identified medical equipment alarms, physical surroundings, and environmental noise as important dimensions of the hospitalization experience. Some participants perceived equipment alarms as frightening, while patients and relatives identified the need for a more comfortable and supportive clinical environment. These findings suggest that the psychological implications of medical technology depend not only on its clinical function but also on patients' understanding and interpretation of the equipment.

Environmental noise is another important concern in hospital settings. Cardiac units may expose patients to continuous monitoring alarms, conversations among healthcare professionals, equipment sounds, and the distressing experiences of other patients. Such environmental conditions can interfere with sleep and increase discomfort. A systematic review by de Lima Andrade et al. [4] demonstrated that environmental noise is a significant concern in hospitals and requires attention as part of efforts to improve healthcare environments. More recently, Sonoda et al. [5] reviewed the effects of environmental noise on inpatient outcomes and identified sleep, psychological state, and patient well-being as outcomes potentially affected by noise.

Sleep disturbance is particularly relevant to hospitalized patients because environmental noise, light, pain, anxiety, and care-related interruptions may compromise rest. A systematic review and meta-analysis by systematic-review authors examining sleep in regular hospital wards identified noise, light, pain, and nursing interruptions among commonly reported sleep-disturbing factors [6]. These findings highlight the importance of environmental management as a component of supportive inpatient care.

Family relationships represent another important dimension of patients' psychological experiences. During a potentially life-threatening cardiac event, family members may provide reassurance, emotional support, practical assistance, and help in understanding medical information. Restricted family access may therefore contribute to feelings of isolation and vulnerability. Olsen et al. [7], in a qualitative study of intensive care patients, demonstrated that family presence could provide emotional

support and assist patients in maintaining a sense of connection with their everyday lives. However, the study also showed that patients' preferences concerning visits varied, indicating the importance of individualized family-contact arrangements.

In a qualitative study involving patients with myocardial infarction admitted to a coronary care unit, Sadeghi et al. [8] identified the importance of maintaining support networks for patients' comfort. Their findings emphasized physical support, mental engagement, peer presence, relatives' support, and spiritual strategies. These findings reinforce the importance of relational and emotional support during critical cardiac care.

Communication with healthcare professionals is equally important. Patients may have questions concerning the severity of their cardiac condition, treatment procedures, future health, recurrence of symptoms, and the possibility of returning to normal activities. When opportunities to ask questions are limited, uncertainty may persist despite receiving technically appropriate treatment. Ameen et al. [9], in a qualitative systematic review of patients' experiences following ACS, identified the importance of tailored information, appropriate management, trust, and professional communication across different stages of care.

The quality of communication may also influence patients' sense of participation and control. Patients who understand their treatment and have opportunities to express concerns may feel more secure during hospitalization. Conversely, unfamiliar procedures and fragmented communication may reinforce uncertainty. These issues are particularly relevant in busy tertiary-care hospitals where multiple healthcare professionals may interact with patients during short periods.

The Pakistani healthcare context provides an important setting for examining these experiences. Family relationships are often central to patients' coping and decision-making, while public tertiary-care hospitals manage substantial patient volumes and complex clinical demands. Understanding patients' perceptions of their hospitalization is therefore essential for developing care approaches that address psychological safety alongside clinical stabilization.

Although previous research has examined psychological distress following myocardial infarction, less attention has been directed towards the interconnected contribution of the physical hospital environment, visible medical technology, family access, and communication to patients' experiences of psychological distress in resource-constrained cardiac-care settings.

This focused analysis explores selected accounts from patients with coronary artery disease in Lahore, Pakistan, to understand how the hospital environment and interpersonal experiences may contribute to psychological distress during cardiac hospitalization.

Research objective

To explore patients' experiences of the hospital environment and identify environmental, interpersonal, and informational factors associated with psychological distress during cardiac hospitalization.

2. METHODS

Study design

This manuscript presents a focused secondary qualitative analysis of selected interview excerpts from an existing qualitative dataset involving 20 patients with coronary artery disease.

The original dataset was generated through a qualitative investigation of patients' experiences and rehabilitation needs. The present analysis addresses a narrower analytical question concerning the psychological experience of hospitalization, particularly the influence of the physical environment, medical technology, family contact, and communication.

Secondary qualitative analysis enables researchers to examine existing qualitative material from a focused analytical perspective. However, its methodological strength depends on the depth, completeness, and contextual information available in the original data. Heaton [10] highlighted the importance of considering the relationship between the original research purpose, the secondary research question, and the characteristics of the available data.

In the present manuscript, the analysis was restricted to selected quotations contained in a three-page analytical document. Complete transcripts were available, which allowed for an exploratory interpretation of a comprehensive reanalysis of all interviews.

Original study context and participants

The source dataset comprised 20 patients with coronary artery disease recruited from a public tertiary-care hospital in Lahore, Pakistan. The study employed purposive sampling to obtain information-rich accounts from patients with experience of coronary artery disease. The selected excerpts describe participants' experiences of hospital surroundings, medical monitoring, noise, family contact, healthcare interactions, and concerns following cardiac diagnosis.

Data source and selection of excerpts

The analytical material consisted of selected English-language quotations extracted from the original qualitative findings document. The excerpts were selected because they contained information relevant to the focused research question. The material addressed perceptions of the hospital as an unfamiliar or threatening place, experiences of monitoring equipment and medical treatment, environmental noise and disruption of sleep, family contact and perceived emotional support, interactions with multiple healthcare professionals, uncertainty about future health and recovery, preferences concerning hospitalization and returning home.

Analysis procedure

The selected quotations were examined using an interpretive thematic approach informed by Braun and Clarke's principles of thematic analysis [11].

The analytical process involved:

1. Reviewing all available participant quotations.
2. Identifying meaningful statements relating to hospitalization and psychological experiences.
3. Grouping similar meanings into preliminary categories.
4. Comparing categories across the available participant accounts.
5. Developing provisional themes that represented interconnected experiences.
6. Selecting quotations to illustrate the analytical interpretation.

The analysis was organized around four dimensions: environmental unfamiliarity, technological and sensory experiences, relational support, and information-related uncertainty. The resulting themes were developed as an interpretive framework from the supplied excerpts.

Trustworthiness and methodological transparency

The analysis was based on participant quotations rather than researcher-generated descriptions alone. Original participant identifiers were retained to maintain traceability between interpretations and the supplied data. The Standards for Reporting Qualitative Research (SRQR) proposed by O'Brien et al. [12] and the Consolidated Criteria for Reporting Qualitative Research (COREQ) developed by Tong et al. [13] provide useful guidance for transparent reporting of qualitative research.

Ethical considerations

The primary study was approved by the ethics review committee and Aga Khan University.

3. RESULTS

The selected participant accounts illustrate several dimensions of psychological distress associated with cardiac hospitalization. Participants described the hospital environment as unfamiliar and sometimes threatening, expressed discomfort with medical equipment and noise, emphasized the importance of family contact, and reported uncertainty about their future following a cardiac diagnosis. Four interconnected themes were developed.

Theme 1: The hospital as an unfamiliar and threatening environment

The hospital environment was not universally perceived as a reassuring place of treatment. For some participants, the surroundings were associated with fear, unfamiliarity, and heightened awareness of illness.

One participant explicitly described the hospital as threatening: "It was a threatening place, and they gave me so many drips and medicines; I was very anxious due to the alarms and noises." (P1, male, 55 years)

This account suggests that the hospital environment acquired a threatening meaning through the combination of unfamiliar treatment procedures, medical equipment, and continuous sounds. The participant's anxiety was not attributed to a single clinical intervention but to the overall experience of being surrounded by unfamiliar medical activities.

Discomfort was also associated with the presence of multiple healthcare professionals. One participant described: "There were five to six nurses and doctors who were dealing with me at a time… seeing them was uncomfortable…" (P18, male, 59 years)

Although multidisciplinary care is essential for patients with acute cardiac conditions, this account illustrates how simultaneous interactions may become overwhelming from the patient's perspective. The presence of several healthcare professionals, unfamiliar procedures, and continuous clinical activity may create a sense of reduced control over the environment. These experiences suggest that psychological comfort should be considered alongside the technical requirements of cardiac care.

Theme 2: Medical technology, environmental noise, and disrupted psychological comfort

Participants described monitoring equipment and environmental noise as important sources of discomfort during hospitalization. Cardiac monitoring was perceived not only as a clinical intervention but also as a visible reminder of illness severity.

One participant explained: "I was wired up through monitors and all that, which my family felt fear of." (P6, male, 70 years) This account highlights that the psychological consequences of medical technology may extend beyond the patient. Family members may also interpret monitoring equipment as an indication of severe illness, potentially increasing their anxiety.

Another participant described the effect of environmental noise on sleep and awareness of cardiac sensations: "I was unable to sleep due to the noises, and I could feel my heartbeat over the night." (P4, male, 61 years, teacher)

The participant's description indicates an interaction between external environmental stimuli and internal bodily awareness. Noise interfered with sleep, while attention to the heartbeat remained prominent during the night.

This experience may be particularly relevant for cardiac patients who are already concerned about their heart condition. Continuous sounds and interruptions may reinforce the perception that something is wrong, even when monitoring equipment is functioning as intended.

The findings indicate that medical technology should be accompanied by patient orientation and reassurance. Explaining the purpose of monitoring equipment and the meaning of alarms may help patients interpret these technologies as protective rather than threatening.

Theme 3: Family separation and the need for relational security

Family contact emerged as an important component of patients' perceived emotional security during hospitalization.

One participant expressed concern about restrictions on meeting family members: "I fear the hospital environment because they do not allow you to meet with the family frequently, and being sick, you know family is important support for patients." (P3, female, 45 years)

This account suggests that restricted family access was experienced as an additional source of distress during an already vulnerable period. The participant associated family presence with support and reassurance, indicating that hospitalization involved not only physical separation from familiar surroundings but also disruption of important emotional relationships.

The experience is consistent with qualitative research highlighting the importance of family involvement in intensive and critical care. Olsen et al. [7] reported that family visits could provide support, reassurance, and a connection with everyday life, although individual preferences regarding visits varied.

Similarly, Sadeghi et al. [8] emphasized the importance of support networks for patients hospitalized with myocardial infarction. Their findings indicated that continuity of family, social, and spiritual support was important for patients' comfort in coronary care settings.

The present participant account reinforces the importance of considering family contact as part of psychological support during cardiac hospitalization. Rather than applying uniform restrictions, hospitals may benefit from flexible approaches that consider patients' preferences, clinical condition, privacy, and family circumstances.

Theme 4: Uncertainty about the future and the desire for meaningful communication

Participants also expressed uncertainty about their lives following a cardiac diagnosis. Their concerns extended beyond immediate treatment and included questions about future health, recovery, and the implications of living with heart disease.

One participant described the desire to discuss the future with healthcare professionals:

"I was anxious about what would happen next in my life after being diagnosed as a heart patient…I wanted to ask doctors about my future with this disease…" (P15, female, 51 years)

This account highlights the importance of communication during hospitalization. The participant was not simply seeking information about current treatment but wanted to understand the implications of the diagnosis for future life.

Another participant expressed a preference for returning home because the hospital environment was associated with anxiety: "The doctors said I have to stay for some days in the hospital whereas I think coming home earlier would have helped me recover more swiftly than in the hospital… because the hospital environment gives anxiety… not due to the staff but due to the surrounding and patients' screaming due to pain and suffering." (P5, male, 59 years)

This account is particularly informative because the participant distinguished between healthcare professionals and the physical and social surroundings of the hospital. The participant did not directly criticize the staff but identified exposure to other patients' suffering and the overall environment as sources of psychological discomfort.

The preference for returning home may reflect a desire for familiarity, emotional comfort, and greater control over one's surroundings. However, this preference should not be interpreted as evidence that early discharge is clinically appropriate. Rather, it emphasizes the importance of making inpatient environments more supportive while preparing patients and families for a safe transition home.

4. DISCUSSION

This focused analysis explored selected patient accounts concerning the psychological experience of hospitalization following a cardiac event. Four interconnected themes were identified: the hospital as an unfamiliar and threatening environment; medical technology and environmental noise as sources of discomfort; family separation and the need for relational security; and uncertainty about the future alongside the desire for meaningful communication.

The findings suggest that psychological distress during cardiac hospitalization may be shaped not only by the underlying cardiac condition but also by how patients experience the environment in which treatment is delivered. Participants' descriptions of the hospital as a threatening and uncomfortable environment highlight the importance of considering the psychological meaning patients attach to clinical surroundings.

For healthcare professionals, cardiac monitoring equipment and continuous treatment represent essential safety measures. However, patients may interpret the same equipment as evidence of severe illness or an immediate threat to survival. This distinction is consistent with the findings of Ziebland et al. [2], who reported that patients recovering from myocardial infarction could find cardiac equipment and unfamiliar hospital surroundings intimidating. Their analysis emphasized the importance of explaining procedures and offering reassurance.

Leong et al. [3] similarly identified the physical environment and monitoring technology as important aspects of the experiences of critically ill patients and their families. Some participants described medical alarms as frightening, suggesting that unfamiliar technology may create psychological discomfort when its purpose is not understood. The present findings extend these observations by highlighting discomfort associated with multiple healthcare professionals attending simultaneously. Although multidisciplinary interactions are often necessary, patients may feel overwhelmed when several professionals approach them without clear explanations.

This suggests that communication should accompany clinical activity. Healthcare professionals should introduce themselves, explain the purpose of procedures, and clarify what patients can expect during hospitalization.

The findings concerning medical equipment and alarms highlight the dual role of technology in cardiac care. Monitoring devices are designed to improve clinical safety, but their appearance and sounds may also communicate illness severity to patients and relatives.

Leong et al. [3] reported similar experiences among critically ill patients in Malaysia, where some patients perceived equipment alarms and lights as frightening. This supports the interpretation that patients' emotional responses to medical technology may depend on their understanding of its purpose.

Environmental noise was another concern in the present accounts. One participant reported an inability to sleep because of noise and described increased awareness of the heartbeat during the night. De Lima Andrade et al. [4] identified environmental noise as an important concern in hospitals. Sonoda et al. [5] further reported that noise may be associated with several inpatient outcomes, including sleep disruption and psychological effects.

A systematic review of inpatient sleep by the authors of the 2024 review [6] also identified noise, light, pain, and care-related interruptions as common sleep-disturbing factors. These findings are relevant to cardiac units, where continuous monitoring and frequent clinical activities may interfere with rest. The implications extend beyond reducing noise levels. Patients should receive information about the function of monitoring equipment and the meaning of routine alarms. Such explanations may reduce uncertainty and help patients distinguish normal monitoring activity from situations requiring clinical intervention.

Nursing teams may also consider practical environmental measures, including reducing unnecessary nighttime conversations, coordinating non-urgent procedures, and providing opportunities for uninterrupted rest when clinically appropriate.

The importance of family contact emerged clearly from participants' descriptions of hospitalization. One participant associated restricted family access with fear and reduced emotional support. This finding is consistent with Olsen et al. [7], who explored the meaning of family presence during intensive care hospitalization. Their findings demonstrated that family visits could provide emotional support and help patients maintain a connection with their everyday lives. However, they also identified the need to consider individual preferences, as visits may sometimes create additional stress.

Sadeghi et al. [8] similarly highlighted the importance of support networks for patients hospitalized with myocardial infarction. Their study emphasized family support, peer presence, and spiritual strategies as components of patient comfort. The findings from the present analysis suggest that family separation may be particularly important in the Pakistani context, where relatives frequently provide emotional reassurance and practical support during illness.

However, family involvement should not be interpreted as requiring unrestricted visitation for every patient. Individual preferences, clinical circumstances, infection prevention, privacy, and the need for rest must be considered. A patient-centred approach would involve discussing family-contact preferences with patients and facilitating communication through appropriate visiting arrangements or alternative communication methods when physical presence is restricted.

Participants' concerns about the future following a cardiac diagnosis indicate that patients need opportunities to discuss more than their immediate treatment. The desire to ask healthcare professionals about future health, recovery, and life after a cardiac event reflects the importance of meaningful communication during hospitalization.

Ameen et al. [9], in their qualitative systematic review of ACS experiences, identified tailored information and appropriate management across different stages of care as central components of positive patient experiences. They reported that patients could feel overwhelmed by information during hospitalization and appreciated receiving explanations appropriate to their circumstances.

Zhao et al. [1] also identified confusion, helplessness, and uncertainty among patients hospitalized with acute myocardial infarction. Their findings emphasized timely communication and individualized support. These findings suggest that communication should be treated as a continuing component of cardiac care rather than a single episode of information provision. Patients may require explanations at admission, before procedures, following diagnosis, and during discharge preparation.

The present findings also highlight the importance of giving patients opportunities to ask questions. A structured nurse-led communication approach may help ensure that patients' concerns are acknowledged and addressed, particularly in busy cardiac units.

One participant expressed a preference for returning home because the hospital environment was associated with anxiety and exposure to other patients' suffering. This finding should be interpreted as an expression of environmental discomfort rather than evidence that early discharge improves recovery.

Research examining readiness for discharge among patients with myocardial infarction has identified the importance of family support and a caring atmosphere. A qualitative study involving patients, family members, and healthcare professionals identified care gaps and healthcare team performance as factors influencing readiness for hospital discharge [14]

The preference for home may reflect the psychological comfort associated with familiar surroundings and greater perceived control. However, premature discharge may expose patients to avoidable clinical risks. The appropriate response is therefore to improve the inpatient environment while ensuring safe discharge preparation and continuity of care.

The findings have several implications for nursing practice and the organization of cardiac care. Patients should receive simple explanations about the purpose of cardiac monitors, infusion pumps, alarms, and other medical equipment. This may help reduce fear associated with unfamiliar technology. Cardiac units should identify avoidable sources of noise and introduce measures to protect patients' sleep. Non-urgent nursing activities should be coordinated where clinically appropriate. Healthcare professionals should discuss patients' preferences concerning family contact and facilitate appropriate involvement during hospitalization. Patients should have opportunities to ask questions about their diagnosis, treatment, prognosis, and anticipated recovery. Information should be delivered in understandable language and at appropriate stages. Patients expressing persistent fear, anxiety, sleep disturbance, or emotional distress should be assessed and offered appropriate psychological support or referral. Patients' expectations concerning returning home should be discussed alongside clinical discharge criteria. Education should include medication, warning symptoms, follow-up, and safe activity. These measures may contribute to a more psychologically supportive cardiac-care environment without compromising the clinical requirements of hospitalization.

5. STRENGTHS AND LIMITATIONS

This analysis provides a focused examination of patient accounts concerning the psychological experience of cardiac hospitalization. Its strength lies in exploring environmental and interpersonal dimensions of care that may receive less attention than medical treatment and clinical stabilization.

The use of original participant quotations helps preserve patients' perspectives and illustrates how apparently routine aspects of hospital care may be experienced as sources of discomfort. However, a few limitations must be acknowledged. The study originated from one public tertiary-care hospital in Lahore, and the selected accounts cannot be assumed to represent the experiences of all patients with coronary artery disease in Pakistan.

Finally, the use of selected excerpts limited the examination of contradictory experiences and the identification of potentially different interpretations. Future research may provide a more comprehensive understanding of these experiences.

6. CONCLUSION

Hospitalization following a cardiac event may create psychological challenges beyond those associated with the underlying cardiac condition. Patients' experiences can be shaped by unfamiliar surroundings, medical equipment, environmental noise, restricted family contact, and uncertainty about their future.

The findings suggest that psychological safety should be recognized as an important component of cardiac care. Alongside clinical monitoring and treatment, healthcare professionals should prioritize environmental comfort, clear communication, appropriate family involvement, and individualized psychological support. Improving the hospital experience may strengthen patients' perceptions of safety and provide a more supportive foundation for subsequent recovery and cardiac rehabilitation.

Recommendations

1. Develop cardiac-unit orientation protocols to explain monitoring equipment, alarms, and routine procedures.
2. Introduce ward-level strategies to reduce avoidable environmental noise and nighttime interruptions.
3. Facilitate appropriate family involvement based on patients' preferences and clinical circumstances.
4. Establish structured nurse-led communication sessions to address patients' questions and concerns.

5. Incorporate psychological assessment into cardiac hospitalization and discharge planning.
6. Strengthen discharge preparation through individualized education and family engagement.
7. Conduct further qualitative research using complete interview transcripts and direct observations of cardiac-care environments.

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