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Parental Anxiety and Its Associated Factors During Pediatric Hospitalization: A Cross-Sectional Study

Agustinus Talindong[1], Sitti Fajrah[2], Ni Kadek Armini[2], Mikaela Delpin Fristalia[3], I Kadek Wartana[3*]
[1]Nursing Study Program, Indonesia Jaya College of Health Sciences, Indonesia
[2]Public Health Study Program, Indonesia Jaya College of Health Sciences, Indonesia
[3]Nursing Department, Faculty of Health, Widya Nusantara University, Indonesia

*Corresponding author: dekadharma05@yahoo.co.id

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CV. Karismavit
Baitul Makmur Street, Palu City,
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Email: admin@karismavit.id

ABSTRACT

Introduction: Hospitalization of a child often brings considerable stress to parents. The uncertainty surrounding the diagnosis, treatment plans, and expected outcomes can provoke anxiety, which may influence how parents engage in caregiving and interact with medical staff.
Objectives: This study aimed to explore the levels of anxiety among parents of hospitalized children and to investigate how various parental characteristics relate to their anxiety levels.
Methods: A cross-sectional study was carried out with 50 parents whose children were admitted to a pediatric ward. Parental anxiety was assessed using the Hamilton Anxiety Rating Scale (HARS). Data on respondent characteristics such as gender, educational attainment, occupation, and history of previous child hospitalizations were collected. The analysis employed descriptive statistics and Chi-square tests to identify significant associations.
Results: The average anxiety score among participants was 18.60 ± 6.70. Moderate anxiety was most common (34.0%), followed by mild anxiety (28.0%), severe anxiety (16.0%), and no anxiety (22.0%). A history of prior child hospitalization showed a significant correlation with increased parental anxiety levels ($p = 0.043$). In contrast, gender, education, and occupation did not exhibit a significant relationship with anxiety ($p > 0.05$).
Conclusion: Anxiety is a prevalent experience for parents during their child's hospital stay. Those with previous hospitalization experiences tend to have heightened anxiety. Implementing early anxiety screening and fostering supportive communication between healthcare providers and parents may help alleviate distress and enhance the overall quality of pediatric care.

Keywords: Parental anxiety; Hospitalization; Pediatric patients; Family-centered care

INTRODUCTION

When a child is hospitalized, it presents profound psychosocial challenges that affect not only the young patient but also their entire family. Parents often struggle with uncertainty surrounding the diagnosis, prognosis, invasive procedures, and potential complications, which can disrupt their sense of control and security. This often triggers a heightened stress response characterized by increased vigilance, anticipatory worry, and persistent rumination, which clinically manifests as anxiety. Anxiety during a child's hospitalization is more than just an emotional reaction; it is a measurable psychological state that can impact cognition, risk assessment, and behavior. Research shows that caregivers are continually exposed to stress-inducing environmental factors such as constant alarms, medical equipment, and unfamiliar hospital procedures during their child's hospitalization. These external stimuli,

combined with parents' inherent protective instincts, often amplify their perceptions of danger, even when the child's medical condition is not critical. Studies from pediatric and neonatal units consistently show that parents of hospitalized children experience significantly higher levels of anxiety compared to those in community or outpatient settings. This response is considered a normal psychological reaction to intense situational stress, not a distinct mental illness (1–3). In contemporary pediatric healthcare, there is growing recognition that supporting parental mental health is crucial to ensuring patient safety. Excessive stress among caregivers can interfere with communication, decision-making, and adherence to care plans, underscoring the need to address parental anxiety as a vital component of comprehensive pediatric care (4,5).

Parental psychological distress during a child's hospital stay is a well-documented phenomenon across various medical settings, especially in neonatal intensive care units and acute pediatric wards. Heightened anxiety levels are common, regardless of the child's age or specific diagnosis, suggesting that the key factor driving parental distress is their sense of vulnerability rather than the exact nature of the illness. Research shows that emotional discomfort often arises within the initial days following admission and can continue throughout the entire hospitalization period, reflecting a prolonged stress response instead of a brief, immediate reaction (2,6,7). According to stress-coping theories, individuals assess situations through cognitive appraisal; when the perceived threat outweighs the perceived coping capabilities, anxiety tends to increase. Many parents view hospitalization as a serious survival threat, even when medical professionals consider the outlook positive. Additionally, a lack of familiarity with medical language and procedures intensifies uncertainty and may lead to catastrophic thinking. Studies have found that caregivers with lower health literacy levels often report greater anxiety, highlighting the crucial role that understanding medical information plays in managing emotional responses (8,9). Thus, parental anxiety arises from a complex blend of how the situation is perceived, cognitively processed, and emotionally experienced, rather than being solely linked to the child's illness severity.

From a biopsychosocial perspective, parental anxiety directly impacts clinical outcomes through behavioral mechanisms. High levels of anxiety can impair focus, reduce the ability to recall information, and interfere with understanding medical instructions given during consultations. Consequently, this can lead to poor medication adherence, medication errors, and lower rates of follow-up adherence (10,11). Furthermore, the caregiver's psychological state plays a crucial role in shaping the child's emotional responses during hospitalization. According to emotional contagion theory, children perceive their parents' emotional signals as indicators of safety or threat; thus, anxious parents may inadvertently reinforce their child's distress, fear of procedures, and resistance to treatment (12,13). Research consistently shows that parental anxiety is associated with increased pain perception and increased behavioral agitation in children undergoing medical interventions. Furthermore, parental stress has been linked to reduced engagement in caregiving tasks and reduced confidence in communicating with healthcare providers (14). These findings underscore that parental anxiety not only presents as a psychological consequence but also serves as a key mediator influencing the pediatric patient experience. Therefore, supporting caregiver mental health is crucial not only for family well-being but also for improving the effectiveness of pediatric treatment outcomes.

Family-centered care models highlight the importance of collaboration between healthcare professionals and families, viewing parents as integral partners in making treatment decisions. Engaged participation of parents in managing symptoms and pain has been demonstrated to enhance both the well-being of infants and the confidence of their caregivers (15). This approach expects parents to comprehend complex medical information, give informed consent, and actively engage in daily caregiving tasks. However, anxiety can hinder their ability to process information effectively and participate fully, thereby weakening the shared decision-making process (4,16). Research shows that clear communication, involving parents in routine care, and providing emotional support help reduce caregiver anxiety and enhance satisfaction with care (17,18). While these findings are well-documented in high-income countries, there is a lack of data from healthcare systems in developing regions.

Factors such as cultural beliefs, socioeconomic status, and variations in healthcare infrastructure can influence how parents perceive hospitalization, often increasing their psychological stress. In contexts where hospital admission is commonly linked to severe illness or death, parents may view any hospitalization as a critical, life-threatening event, regardless of the actual clinical condition. This underscores the need for locally gathered evidence to better understand patterns of parental anxiety specific to the context and to develop appropriate psychosocial interventions (1,19). In light of this, the current study aimed to assess the levels of parental anxiety and explore its relationship with various parental characteristics among those with children admitted to the hospital.

METHODS

This study used a cross-sectional analytical design to examine parental anxiety and associated factors during pediatric hospitalization. The study was conducted in the pediatric inpatient ward at Anuntaloko Hospital, Parigi, Indonesia. The study lasted for three months, from March to May 2025. The study site was selected based on the high volume of pediatric admissions and the implementation of routine parent bedside support, which allows for direct assessment of situational anxiety responses among caregivers.

The study population consisted of parents accompanying their hospitalized children in the pediatric ward during the study period. The sampling technique used was consecutive sampling, in which all eligible parents admitted during the data collection period were invited to participate until the required sample size was achieved. A total of 50 respondents met the inclusion criteria and agreed to participate. Inclusion criteria were: being the primary caregiver accompanying the hospitalized child, staying in the ward during hospitalization, being able to communicate verbally in Bahasa, and providing informed consent. Exclusion criteria included: parents

of critically unstable pediatric patients requiring intensive emergency intervention, and parents with a documented psychiatric diagnosis that could independently influence anxiety levels. Participant characteristics collected included age, gender, educational level, occupation, and previous hospitalization experience. These variables were included to allow contextual interpretation of anxiety levels and potential influencing factors.

The primary dependent variable was parental anxiety levels. Operationally, parental anxiety was defined as the total score obtained from a 14-item anxiety questionnaire (C1–C14) that assessed emotional, cognitive, and physiological symptoms experienced during the child's hospitalization. The total score represented a cumulative measure of anxiety intensity. Anxiety scores were categorized into four levels based on predetermined thresholds (No anxiety, Mild anxiety, Moderate anxiety, Severe anxiety). The primary independent variable was previous hospitalization experience, operationally defined as whether the parent had previously accompanied the child during a hospitalization (coded as Yes/No).

Parental anxiety was assessed using the 14-item Hamilton Anxiety Rating Scale (HARS), a structured questionnaire that addresses aspects such as emotional distress, worry, fear, sleep disturbance, and difficulty concentrating. Each item is rated on a Likert scale ranging from 0 to 4, where 0 represents no symptoms, 1 indicates the presence of one symptom, 2 corresponds to moderate symptoms or about half of the symptoms present, 3 reflects severe symptoms or more than half of the symptoms present, and 4 indicates very severe symptoms with all symptoms present. Higher overall scores on this scale reflect greater levels of anxiety.

Data collection was conducted sequentially in several phases. Initially, formal approval was obtained from the administration of Anuntaloko Hospital in Parigi. Eligible parents were then approached in the pediatric ward and provided with detailed information about the study's aims, methods, potential risks, and benefits. After written consent was obtained, participants were invited to complete the questionnaire independently in a calm and comfortable setting within the ward. The researcher was present to answer clarifying questions but did not direct or influence the participants' responses. After the questionnaires were collected, they were immediately reviewed to ensure all items had been completed, thereby reducing the possibility of missing data.

Data were entered and analyzed using the Statistical Package for the Social Sciences (SPSS) version 30. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, were used to describe the respondents' characteristics and their anxiety levels. The relationship between previous hospitalization experience and parental anxiety was assessed using the Chi-square test. A p-value less than 0.05 was considered statistically significant.

Participation was completely voluntary, with all participants providing written consent before any data was collected. Strict measures were taken to ensure confidentiality and anonymity throughout the process. No personal identification was collected, and all information was securely stored for research purposes only. Participants were also clearly informed that they could withdraw from the study at any time without affecting their child's medical care.

RESULTS

Fifty parents took part in this study (**Table 1**), with women making up the majority at 76%. Nearly half of the participants (44%) had finished senior high school, and 40% were engaged in self-employment. Furthermore, 66% of the respondents indicated that their child had experienced hospitalization in the past.

Table 1. Characteristics of Participants (n = 50)

Variable	n	%
Gender		
Female	38	76.0
Male	12	24.0
Education level		
Junior high school	11	22.0
Senior high school	22	44.0
Higher education	17	34.0
Occupation		
Housewife	13	26.0
Civil servant	17	34.0
Self-employed	20	40.0
Previous child hospitalization experience		
Yes	33	66.0
No	17	34.0

Source: Primary Data

The average parental anxiety score was 18.60 ± 6.70, with scores ranging from 9 to 30 (**Table 2**). According to the HARS classification, most parents exhibited moderate anxiety (34.0%), while 28.0% experienced mild anxiety. Severe anxiety was noted in 16.0% of the participants, and 22.0% reported no anxiety at all.

Table 2. Overview of Parental Anxiety Data and Its Distribution (n = 50)

Variable	n	%	Mean ± SD	Min-Max
Anxiety Score (HARS)			**18.60 ± 6.70**	**9 – 30**
No anxiety	11	22.0		
Mild anxiety	14	28.0		
Moderate anxiety	17	34.0		
Severe anxiety	8	16.0		
Total	**50**	**100**		

Source: Primary Data

Table 3. Analysis of Relationships Between Factors Related to Parental Anxiety Using Chi-Square Test (n = 50)

Variable	No Anxiety n (%)	Anxiety n (%)	χ^2	p-value
Gender				
Male	4 (33.3)	8 (66.7)	0.73	0.393
Female	7 (18.4)	31 (81.6)		
Education level				
Junior high school	4 (36.4)	7 (63.6)	3.21	0.201
Senior high school	4 (18.2)	18 (81.8)		
Higher education	3 (17.6)	14 (82.4)		
Occupation				
Housewife	4 (30.8)	9 (69.2)	1.27	0.529
Civil servant	3 (17.6)	14 (82.4)		
Self-employed	4 (20.0)	16 (80.0)		
Previous hospitalization				
No	7 (41.2)	10 (58.8)	**4.08**	**0.043***
Yes	4 (12.1)	29 (87.9)		

Source: Primary Data

*$p < 0.05$ (Chi-square test)

The chi-square test revealed **(Table 3)** a significant link between prior hospitalization and parental anxiety (χ^2=4.08; p=0.043). Parents whose children had been hospitalized before were more prone to anxiety than those without such experience. However, no meaningful relationships were detected between anxiety and factors such as gender, education level, or occupation (p>0.05).

DISCUSSION

This study reveals that anxiety among parents during their child's hospitalization is highly common, with a significant number of caregivers exhibiting symptoms that reach clinical concern. These results align with earlier research that highlights hospitalization as a major psychological challenge for families (1,6,20). The hospital setting often subjects parents to ongoing uncertainty about their child's diagnosis, treatment results, and possible complications, fueling anticipatory anxiety. Notably, the level of anxiety did not depend on the specific medical condition, implying that how parents perceive the threat plays a more crucial role than the actual severity of the illness. This finding supports stress-appraisal theory, which proposes that people respond more to perceived risks than to objective medical facts (7,9). Comparable rates of anxiety among caregivers have been documented in neonatal and pediatric units worldwide, indicating that this emotional response is a widespread issue rather than one limited by cultural factors (2,3). The consistent observations across different environments suggest that parental anxiety during hospitalization is to be expected and, therefore, should be addressed through systematic clinical strategies rather than sporadic interventions.

The presence of multiple concurrent stressors likely underlies the pattern of anxiety observed. Parents often face unfamiliar medical technologies, frequent clinical assessments, and complex terminology that can be hard to grasp. These factors contribute to cognitive overload, fostering uncertainty and encouraging catastrophic thinking. Research indicates that poor communication and a limited understanding of medical information are strong predictors of elevated anxiety levels among caregivers (18,21). Interestingly, anxiety does not necessarily align with the severity of the illness; instead, the perceived unpredictability of the disease's course has a greater impact. Parents frequently perceive hospitalization as a potentially life-threatening situation, especially when healthcare providers use technical jargon without offering clear explanations. This highlights the critical need for effective communication in pediatric healthcare settings. Providing structured information, repeating key points, and allowing time for questions have been shown

to alleviate psychological distress and enhance parental coping(17,22). Therefore, anxiety in this context should be viewed as a modifiable response that is significantly shaped by the quality of healthcare communication.

Parental anxiety carries significant clinical consequences. High levels of anxiety can disrupt a parent's focus and memory, hindering their ability to fully comprehend treatment guidelines. This, in turn, may lead to reduced medication compliance and follow-up care (10,11). Additionally, when caregivers struggle to regulate their emotions, it can influence a child's emotional adjustment through a process of emotional contagion. Children often perceive parental fear as a signal of threat, which can amplify their experience of pain, increase distress during medical procedures, and contribute to resistance in hospital settings (12,23). Research shows a clear link between parental distress and elevated anxiety in children, as well as difficulties in their behavioral adjustment while hospitalized. Interventions aimed at alleviating procedural pain and distress, like virtual reality distraction techniques, have proven successful in making pediatric procedures more tolerable (24). These approaches can also help ease parental anxiety by increasing the child's apparent comfort and minimizing visible signs of discomfort.

Another perspective on these findings involves changes in parental roles. When a child is hospitalized, the primary caregiving duties often shift from parents to medical staff, which can lead to feelings of helplessness and a loss of control. This disruption in their expected role is a significant factor contributing to parental stress and anxiety (14,25). Parents who feel excluded from their child's care tend to experience higher levels of distress, while those who engage in everyday caregiving tasks report reduced anxiety and greater confidence. Research on managing pain in newborns shows that organized participation by parents helps lessen their infant's discomfort and boosts the parents' confidence in caregiving (15). Family-centered care models prioritize collaboration between healthcare providers and families, enabling parents to stay actively involved in their child's treatment. Strategies such as participating at the bedside, receiving education about medical procedures, and being part of decision-making processes have been linked to decreased caregiver stress and increased satisfaction (4,16). These observations indicate that anxiety stems not just from emotions but also from how parents perceive their social role and autonomy during hospitalization.

Cultural and contextual influences can help clarify the anxiety levels observed in caregivers. In many developing healthcare systems, hospital stays are often linked to serious illness or a high risk of death, which heightens the sense of threat. Limited familiarity with hospital settings and varying degrees of health literacy can increase feelings of uncertainty and lead to catastrophic thinking (8,19). Implementing regular screening for caregiver psychological distress could be instrumental in identifying families who need additional support. Research shows that psychosocial interventions—such as structured communication, educating parents, and providing emotional counseling—can notably reduce caregiver anxiety and enhance overall care outcomes (17,22). Therefore, parental anxiety should be regarded as a fundamental aspect of managing pediatric hospitalizations rather than a secondary concern. Supporting caregivers' mental well-being may boost their satisfaction, encourage better adherence to care plans, and potentially contribute to improved recovery for the child.

This study has several limitations that warrant careful consideration when interpreting its findings. The cross-sectional design limits the ability to draw causal conclusions between participant characteristics and levels of parental anxiety, which may also fluctuate throughout different phases of hospitalization. Data were gathered through self-reported questionnaires, potentially introducing response bias as parents might understate or overstate their emotional state. Furthermore, the study did not include objective clinical factors such as illness severity, treatment complexity, or invasive procedures, restricting the ability to assess how medical variables impact anxiety. Conducted within a single hospital setting, the results may not be broadly applicable due to variations in healthcare environments and communication practices elsewhere.

Future research would benefit from longitudinal designs that track changes in parental anxiety from admission through to post-discharge. Including clinical variables like length of stay and disease severity could provide greater insight into the factors influencing caregiver psychological responses. Additionally, intervention studies focused on structured communication, parental education, and involvement in child care are needed to identify effective approaches to alleviate anxiety. Conducting multicenter studies with larger sample sizes is also recommended to enhance generalizability and deepen understanding of the link between parental anxiety and child health outcomes.

CONCLUSION

Anxiety among parents during their child's hospital stay is a common and significant issue. Many parents experience heightened anxiety due to the psychological strain brought on by uncertainty, perceived threats, and the disruption of their parental roles within the medical setting. This emotional response is not merely a side effect but a crucial aspect of pediatric care that can impact communication, decision-making, and the overall treatment experience. Identifying anxious caregivers early is vital to providing holistic, family-centered care. Incorporating regular psychological assessments, clear and structured communication, along with supportive measures into pediatric ward routines can help reduce parental distress and improve the quality of care. Addressing parental anxiety not only promotes the well-being of the family but also fosters better cooperation, greater satisfaction, and may lead to improved clinical outcomes for hospitalized children.

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AUTHORS' CONTRIBUTIONS

AT initiated the research concept, gathered and curated the data, prepared the initial manuscript draft, approved the final version of the manuscript, and served as the corresponding author. SF was responsible for designing the study, assisting with data collection and curation, and approving the final manuscript. MDF and NKA contributed to drafting the initial manuscript, performed statistical analysis and data interpretation, and approved the final manuscript.

DECLARATIONS

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2. Use of Artificial Intelligence (AI)

The authors used Artificial intelligence tools solely to aid in language editing and enhance the clarity of the academic writing. The authors personally reviewed, edited, and approved all the content, assuming full responsibility for the accuracy, integrity, and originality of the manuscript.

3. Conflict of Interest

The authors confirm that they have no conflicts of interest to disclose.

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