

Association Between Anxiety Levels and Demographic Characteristics of ICU Patients' Family Members: A Cross-Sectional Study

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ABSTRACT

Family members of patients admitted to the Intensive Care Unit (ICU) are vulnerable to psychological distress, particularly anxiety. Understanding how demographic factors influence anxiety levels can inform targeted support interventions. Research aim to examine the relationship between demographic characteristics and anxiety levels among family members of ICU patients prior to any therapeutic intervention. This was a cross-sectional analysis of baseline data from 65 family members of ICU patients at a public hospital in Central Java, Indonesia. Demographic variables included age, gender, and relationship to the patient. Anxiety was measured using the Hamilton Anxiety Rating Scale (HARS). Data were analyzed using descriptive statistics, and chi-square tests. Most participants were female (56.9%) and in the 31–45-year age group (44.6%). The majority were the patient's child (38.5%). Severe to very severe anxiety was observed in 63% of participants. Statistical analysis showed a significant association between anxiety levels and age group ($p < 0.05$), but not with gender or relationship to the patient. Age appears to be a significant factor influencing anxiety levels among ICU patients' family members. These findings highlight the importance of tailoring psychological support based on demographic profiles to improve family-centered care in critical care settings.

KEYWORDS: anxiety, family members, ICU, demographic factors, HARS, psychological distress

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I. INTRODUCTION

Admission to an Intensive Care Unit (ICU) often results in psychological distress among patients' families, who face uncertainty, restricted access, and emotional strain. Among the most common psychological responses is anxiety, which may impair decision-making, communication, and emotional functioning. Previous studies indicate that up to 70% of ICU patients' families experience clinically significant anxiety (1). This emotional burden not only affects the families' well-being but can also indirectly influence patient care outcomes, particularly in family-centered care settings (2).

Several international studies have explored the psychological impact of ICU hospitalization on families and identified various contributing factors, including information needs, decision-making pressure, and proximity to end-of-life situations (3). However, limited studies have been conducted in Southeast Asia—particularly in Indonesia—where strong

cultural and religious values play a crucial role in shaping emotional responses and caregiving behaviors (4).

Moreover, while anxiety among ICU family members is well-documented, few studies have specifically examined how demographic variables such as age, gender, and familial role relate to anxiety levels prior to any intervention, especially in low- and middle-income countries. Most existing research focuses on post-intervention outcomes without sufficient baseline profiling of psychological vulnerability (5).

This study addresses this gap by analyzing the association between demographic characteristics and pre-intervention anxiety levels in ICU patients' families within an Indonesian hospital setting. The novelty of this study lies in its focus on pre-treatment psychological assessment as a foundation for culturally appropriate and demographically sensitive interventions. The findings are expected to support the

Association Between Anxiety Levels and Demographic Characteristics of ICU Patients' Family Members: A Cross-Sectional Study

development of early-screening protocols and targeted emotional support programs for families in critical care settings.

II. METHOD

A. Population and Sample

This study employed a cross-sectional analytical design using baseline data obtained prior to any intervention in a quasi-experimental project. The study was conducted in the Intensive Care Unit (ICU) of a government hospital in Central Java, Indonesia, between January and March 2025.

The target population consisted of immediate family members (spouse, child, or parent) of patients who were being treated in the ICU during the study period. The sampling technique used was purposive sampling, with inclusion criteria as follows: Aged 17 years or older, being a direct family member (spouse, child, or parent) of an ICU patient, able to communicate in Bahasa Indonesia, willing to participate and provide informed consent. Exclusion criteria included: Known psychiatric or neurological disorders, currently taking psychiatric medications, unwilling to complete the anxiety assessment instrument. A total of 65 participants who met these criteria were included in the final analysis.

B. Instrument

The Hamilton Anxiety Rating Scale (HARS) was used to assess the anxiety levels of participants. HARS is a clinician-rated instrument consisting of 14 items, each measuring various aspects of anxiety including both somatic and psychological symptoms. Each item is scored from 0 (not present) to 4 (very severe), with a total possible score ranging from 0 to 56. Based on total scores, anxiety levels were categorized as: Mild: ≤ 17 , Moderate: 18–24, Severe: 25–30, and Very Severe: >30 . The HARS tool has been widely validated and has shown good reliability in both international and Indonesian populations.

C. Data Collection

Data were collected through direct interviews conducted in a quiet, private space near the ICU waiting area to ensure confidentiality and minimize stress. Participants were approached by trained research assistants after receiving a brief explanation of the study. Once consent was obtained, demographic data (age, gender, and relationship to the patient) were recorded, followed by the administration of the HARS questionnaire by the trained interviewer.

Only baseline data (prior to any spiritual therapy or psychological intervention) were used in this study to focus on the natural anxiety profile of family members based on their demographic characteristics.

D. Data Analysis

Data were analyzed using IBM SPSS version 25.0. Descriptive statistics (frequency, percentage, mean, and

standard deviation) were used to summarize demographic characteristics and anxiety level distributions.

To examine the association between demographic variables (age group, gender, and relationship to patient) and anxiety levels, the following tests were used:

Chi-square test for categorical comparisons

One-way ANOVA for comparing mean HARS scores across different demographic groups (if applicable)

A significance level of $p < 0.05$ was used to determine statistical significance.

III.RESULT

Table 1. Demographic Characteristics of Participants (N = 65)

Variable	Categor y	n	%
Gender	Male	28	43.1%
	Female	37	56.9%
Age Group (years)	17–30	18	27.7%
	31–45	29	44.6%
	46–60	18	27.7%
Relationship to Patient	Spouse	21	32.3%
	Child	25	38.5%
	Parent	19	29.2%

Most participants were female (56.9%), predominantly aged 31–45 years (44.6%), and most commonly the child of the patient (38.5%). This suggests that middle-aged adult children—particularly women—are often primary supporters during ICU admissions.

Table 2. Distribution of Anxiety Levels (HARS Score Categories)

Anxiety Level	Score Range	n	%
Mild	≤ 17	5	7.7%
Moderate	18–24	19	29.2%
Severe	25–30	27	41.5%
Very Severe	>30	14	21.5%

A significant proportion of participants experienced severe (41.5%) to very severe (21.5%) anxiety prior to any intervention. This supports the need for psychological support in ICU family-centered care, especially in early phases of hospitalization.

Table 3. Association Between Demographic Variables and Anxiety Levels (Chi-Square Test)

Variable	p-value	Interpretation
Gender	0.216	Not significantly associated with anxiety levels
Age Group	0.037*	Significant association with anxiety level

Association Between Anxiety Levels and Demographic Characteristics of ICU Patients’ Family Members: A Cross-Sectional Study

Relationship to Patient	0.482	Not significantly associated with anxiety levels
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Only age group was significantly associated with anxiety levels ($p = 0.037$), indicating that younger participants were more likely to experience higher anxiety. No significant differences were found between anxiety levels and gender or relationship to the patient.

DISCUSSION

This study found that the majority of family members of ICU patients experienced high levels of anxiety prior to any therapeutic intervention. Specifically, 41.5% reported severe anxiety, and 21.5% were categorized as having very severe anxiety. Among the demographic factors examined, age group showed a statistically significant association with anxiety levels ($p = 0.037$), while gender and relationship to the patient were not significantly associated.

The finding that younger family members experienced higher levels of anxiety may reflect limited coping mechanisms, emotional maturity, and experience in dealing with life-threatening medical events. Younger adults, particularly those aged 17–30, may be less prepared to face the emotional burden of having a loved one in critical condition (6), leading to heightened psychological stress (7). Conversely, older family members may have more life experience, established spiritual or emotional resilience, and familiarity with healthcare environments, which can serve as protective factors against anxiety (8).

The lack of significant association between gender and anxiety contrasts with commonly held assumptions that females are more prone to anxiety in caregiving contexts. This result suggests that in ICU settings, the situational intensity may override typical gender-based psychological patterns, resulting in similarly high anxiety across both males and females (9). Additionally, the absence of a significant relationship between familial role (spouse, child, or parent) and anxiety level indicates that emotional distress may be universally experienced by family members regardless of their biological or relational connection to the patient (10).

These findings are consistent with previous studies highlighting high baseline anxiety levels among ICU patients’ family members. For example, more than 60% of families in the ICU experience moderate to severe anxiety upon admission of their relatives. Similarly, a study by Gerian, et al. (2023) demonstrated that age was a significant factor influencing anxiety, with younger participants reporting higher distress levels (11).

In contrast to some global literature suggesting that female caregivers report higher anxiety than males, this study did not find gender differences to be statistically significant. Cultural context may play a role here, as caregiving responsibilities in Indonesian families are often shared or vary less rigidly by gender (12).

Moreover, studies such as Asadi et al (2025) found that emotional responses in ICU settings are often influenced more by perceived helplessness and lack of information than by the nature of the relationship with the patient. This supports the current study’s finding that the role (spouse, child, parent) did not predict anxiety levels significantly (13).

These results emphasize the importance of early psychological screening for family members—especially younger adults—in ICU settings. Identifying those at risk can inform the design of targeted emotional support interventions, which align with the principles of family-centered care and holistic nursing.

CONCLUSION

This study concludes that a significant proportion of family members of ICU patients experience severe to very severe anxiety prior to any therapeutic intervention. Among the demographic factors examined, age was found to be significantly associated with anxiety levels, with younger family members experiencing higher levels of psychological distress. In contrast, gender and relationship to the patient were not significantly related to anxiety levels.

These findings highlight the need for early psychological assessment and targeted emotional support, particularly for younger family members, as part of holistic and family-centered ICU care. Integrating demographic profiling into nursing assessments may help identify vulnerable individuals and optimize supportive interventions during critical care hospitalization..

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Association Between Anxiety Levels and Demographic Characteristics of ICU Patients' Family Members: A Cross-Sectional Study

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