

The Relationship Between Nurses' Caring Attitudes and Anxiety Levels Among Patients' Families in Intensive Care Units

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ABSTRACT

Introduction: Families of critically ill patients in intensive care units often experience anxiety due to uncertain prognosis and unfamiliar medical environments. Nurses' caring behaviors play a crucial role in reducing family anxiety, but empirical evidence in Indonesian regional hospitals is limited.

Objective: This study aimed to identify the relationship between nurses' caring attitudes and family anxiety levels in the intensive care unit of a regional general hospital.

Method: A cross-sectional correlational study was conducted with 65 family members of ICU and NICU patients selected through simple random sampling. Data were collected using the Caring Behavior Inventory (CBI-24) and the Hamilton Anxiety Rating Scale (HARS), analyzed using Spearman's rank correlation.

Result: The majority of nurses demonstrated good caring attitudes (73.8%), with the highest professional knowledge (83.1%) and the lowest respect (64.6%). Family anxiety was mostly mild (44.6%) or absent (38.5%), with only 3.1% experiencing severe anxiety. Spearman analysis revealed a significant negative correlation ($r=-0.352$; $p=0.004$), indicating that higher caring attitudes were associated with lower family anxiety.

Conclusion: There is a significant negative relationship between nurses' caring attitudes and family anxiety in intensive care settings. These findings support the implementation of standardized care protocols, therapeutic communication training, and a family-centered care approach to optimize nursing quality in regional hospitals in Indonesia.

Keywords: family anxiety level, intensive care unit, nurses' caring attitude

Introduction

The intensive care unit is a special service unit in a hospital designed to provide intensive care for patients with life-threatening critical conditions. This unit is equipped with trained medical personnel and sophisticated equipment for continuous monitoring and timely intervention, with the aim of maximizing the patient's chances of recovery (Rustini et al., 2023). Intensive care nurses are not only responsible for clinical care but must also apply holistic caring practices to meet the physical, emotional, and social needs of patients and their families (Aisyah et al., 2024). Caring in nursing is defined as a responsible attitude of concern that prevents negative impacts, provides full attention, and respects human dignity Firmansyah et al.(2019), which is crucial in intensive care units where patients often face a high risk of death.

Families of intensive care patients often experience severe anxiety due to uncertainty about prognosis, frightening sterile environments, limited visiting hours, and difficulty understanding complex medical information. Manifestations of anxiety include insomnia, restlessness, panic, and feelings of helplessness (Pardede, 2020). The main triggering factors include sudden changes in the environment, strict ward regulations, disruption of daily activities, financial constraints, and the quality of communication from healthcare personnel (Suprajitno et al., 2020). Among these factors, the caring attitude of nurses is the most controllable and intervenable variable for providing psychological support, fostering a sense of security, and facilitating the emotional recovery of families.

The phenomenon of anxiety among ICU patients' families is global in nature and has a high prevalence. World Health Organization (2023) estimates that anxiety disorders affect 4% of the world's population, while studies in the United States report that 10-42% of ICU patients' families experience clinical symptoms of anxiety (Kulkarni et al., 2011). In Indonesia, Ministry of Health RI (2018) recorded a prevalence of 6% in the population aged 15 years and above, equivalent to 14 million people, with recent studies showing that 70-72.5% of ICU patients' families experience moderate to severe anxiety (Elias et al., 2013). These consistent findings underscore the urgency of caring-based interventions to address the significant psychological impact on families.

Jean Watson's Theory of Human Caring is the main foundation of modern nursing practice, emphasizing transpersonal interpersonal relationships as the basis for healing. However, the reality in the field shows that the implementation of caring is still suboptimal due to high workloads, lack of communication training, and a lack of specific SOPs (Zamanzadeh et al., 2010). Rohana et al. (2018) found that families often rate caring as low due to a lack of eye contact, smiles, and clear explanations from nurses. Research by Asadi & Salmani (2024) confirmed that healthcare team communication is a determining factor in ICU family stress, while Sarapang (2022) reported that even though caring was rated as good (64.7%), severe anxiety remained dominant (52.9%). Risk factors such as critical patient condition, information deficit, and interaction restrictions exacerbate anxiety, although no study has specifically measured Watson's caring dimension using the Caring Behaviors Inventory (CBI) instrument validated in Indonesia.

Previous research highlights a methodological gap: although the relationship between caring and anxiety is recognized, most studies use general instruments without comprehensive theoretical references or focus on specific dimensions such as emotional support, clear communication, and interpersonal trust as described by Watson. The novelty of this study lies in the application of Watson's theory with the CBI-24, which has been tested for validity and reliability in the Indonesian context, offering a more precise measurement of

caring behavior than previous studies and adding dimensions of caring that were not included in previous studies.

A preliminary study conducted on June 12, 2025 in the ICU and NICU of Regional General Hospital, a type B referral hospital Regency that was renamed in 2024 in honor of the 4th Vice President, involved 9 patient families and 3 nurses through observation and in-depth interviews. A total of 88.9% of families reported anxiety, with 55.6% experiencing the ICU for the first time, 22.2% worried about the patient's condition and death, 11.1% anxious about non-BPJS costs, and 11.1% routine but still anxious. Anxiety was exacerbated by unfamiliar medical equipment and unclear information. Regarding care, 33.3% of families rated it as good, 22.2% as adequate, and 44.4% as unsatisfactory in terms of communication, attitude, and patience in explaining medical matters to laypeople.

The nurse interviews confirmed the variability of family anxiety 66.7% saw negative assumptions about admission to the ICU, while 33.3% noted differences in responses based on education. All three nurses stated that there was no routine training in effective communication, caring SOPs, or handling family anxiety; the last training was years ago. These findings underscore the need for empirical research in regional hospitals such as Regional General Hospital to provide evidence of the relationship between nurses' caring attitudes and family anxiety, which can be the basis for developing training policies and SOPs for holistic nursing services.

Objective

The purpose of this study was to identify the relationship between nurses' caring attitudes and the level of anxiety experienced by families of critically ill patients in the Intensive Care Unit of Regional General Hospital.

Method

Design and setting

This study used a correlational quantitative design with a cross-sectional approach to analyze the relationship between nurses' caring attitudes and the anxiety levels of patients' families. The study was conducted in the ICU and NICU of Regional General Hospital, a type B hospital that serves as a referral center for health services for the people of Regency and the surrounding area. Data collection was conducted simultaneously on both variables within the same time period to identify the correlation between nurses' caring behavior and the level of anxiety experienced by families of critical patients in the intensive care unit.

Population and sampling

The study population consisted of families of patients treated in the ICU and NICU of the Regional General Hospital during the data collection period. Based on visit data for the last month, the population reached 181 individuals, consisting of 99 families of ICU patients and 82 families of NICU patients. Inclusion criteria included family members aged 18 years and older, accompanying the patient for at least 24 hours, being able to read and write, and being willing to sign an informed consent form. Exclusion criteria included families who did not complete the questionnaire or were in an unstable emotional state that could affect the validity of their responses. The sampling technique used was probability sampling using the simple random sampling method, which ensures that every member of the population has an equal chance of being selected. The sample size was calculated using the Slovin formula with a 10% margin of error to provide an acceptable margin of error in social and health research:

$n = \frac{N}{1+N(e)^2} = \frac{181}{1+181(0.1)^2} = 64.41 \approx 65$ respondents. The selection of a 10% margin of error was based on considerations of time constraints, accessibility of the population in intensive care units with strict regulations, and the correlational nature of the study, which did not require the high precision of experimental research.

Sample distribution was carried out proportionally to two intensive care units based on the proportion of each population to ensure representativeness: 35 respondents (54%) from the ICU and 30 respondents (46%) from the NICU. The sampling procedure was carried out by approaching families of patients who met the criteria during visiting hours, explaining the purpose of the study, and requesting their voluntary participation. Respondent selection took into account the diversity of demographic characteristics such as age, gender, education level, and relationship to the patient to increase the external validity of the research findings to the general population of intensive care patients' families.

Instrument and measurement

Data collection used a structured questionnaire consisting of three sections: demographic data, a nursing caring attitude instrument, and a family anxiety level instrument. Demographic data included initials, age, gender, education level, and relationship to the patient for characterization of the research sample. Nurse caring attitudes were measured using the Caring Behavior Inventory (CBI-24) developed by Wolf et al.(1994) and revised by Wu et al.(2006), consisting of 24 statement items with a 6-point Likert scale (1 = never to 6 = always) covering five dimensions.

These dimensions include: Positive Connectedness (items 7, 17, 19, 22), Assurance of Human Presence (items 1, 5, 6, 13, 18, 20, 21), Professional Knowledge and Skill (items 9, 10, 11, 12, 15), Attentive to Others' Experience (items 2, 3, 14, 16), and Respectful Deference (items 4, 8, 23, 24). The Indonesian version of the CBI-24 instrument has been validated with a Cronbach's alpha reliability value of 0.921, indicating excellent internal consistency for the Indonesian context. Total scores range from 24 to 144, with higher scores indicating a better perception of nursing care from the perspective of the patient's family.

Minor modifications were made to items 1, 2, 5, 6, 13, 18, 20, and 21 to adjust the context of the questions from the patient's perspective to that of the family accompanying the patient in the intensive care unit without changing the substantial meaning of each item. The questionnaire was completed by the patient's family based on their direct experience of the nurses' caring behavior during a minimum of 24 hours of care in the ICU or NICU. The completion procedure was carried out with the assistance of researchers to ensure the respondents' understanding of each item and the completeness of the data, with an average completion time of 10-15 minutes per respondent.

Data collection and analysis

Data collection was conducted after obtaining ethical approval and permission from the Director of Regional General Hospital, in December 2025. Respondents who met the inclusion criteria were approached during visiting hours in the ICU and NICU, given an explanation of the research objectives, and asked to voluntarily sign an informed consent form. The questionnaire, consisting of demographic data, CBI-24, and HARS, was distributed in printed form with the assistance of researchers to ensure understanding and completeness of completion, with an average completion time of 15-20 minutes per respondent. The collected data underwent editing to check completeness, coding for variable categorization, data entry

using Microsoft Excel, and cleaning to ensure accuracy before statistical analysis. The ethical principles applied included informed consent, confidentiality (respondent identities were coded), anonymity (no personal data was published), veracity (honest information about the research), and justice (fair treatment without discrimination).

Data analysis was performed using Jeffrey's Amazing Statistics Program (JASP) in two stages: univariate and bivariate. Univariate analysis was conducted to describe the demographic characteristics of respondents and the frequency distribution and percentage of nurses' caring attitudes and family anxiety levels, presented in tables with mean values, standard deviations, and minimum-maximum ranges. The Kolmogorov-Smirnov normality test ($n \geq 50$) showed that the nurses' caring attitudes were normally distributed ($p = 0.129 > 0.05$), while the anxiety levels were not normally distributed ($p = 0.045 < 0.05$). So bivariate analysis using Spearman's Rank Correlation non-parametric test was used to test the relationship between the two variables with a significance level of $\alpha = 0.05$. The strength of the correlation was interpreted based on Spearman's correlation coefficient (rs): 0.00-0.19 (very weak), 0.20-0.39 (weak), 0.40-0.59 (moderate), 0.60-0.79 (strong), and 0.80-1.00 (very strong), with the direction of the relationship indicated by a positive or negative sign.

Result

Table 1. Respondent Characteristics Based on Demographic Data

Characteristics	Frequency	Percentage (%)
Gender		
Male	11	16.9
Women	54	83.1
Total	65	100.0
Age		
18-25	7	10.8
26-33	11	16.9
34-41	16	24.6
42-49	11	16.9
≥ 50	20	30.8
Total	65	100.0
Highest Level of Education		
D3/S1	9	13.8
SD	16	24.6
SMP	19	26.2
SMA	23	35.4
Total	65	100.0
Room		
ICU	35	53.8
NICU	30	46.2
Total	65	100.0

Based on the results of a questionnaire distributed to 65 respondents, the majority of patients' families were female (83.1%), aged ≥ 50 years (30.8%), with a high school education (35.4%). The distribution of respondents based on location showed that 53.8% were from the

ICU and 46.2% from the NICU, in accordance with proportional sampling allocation. These characteristics indicate that the families of patients in the intensive care unit at Regional General Hospital are predominantly elderly women with a secondary education background.

Table 2. Caring Attitude of Nurses in the Intensive Care Unit

Category Caring	Frequency	Percentage (%)
Good	48	73.8
Less	1	1.5
Moderate	16	24.6
Total	65	100

Based on Table 2 above, the analysis results show that the patients' families rated the nurses' caring attitude at Regional General Hospital as "good" for 48 respondents (73.8%), 'less' caring for 1 respondent (1.5%), and "moderate" caring for 16 respondents (24.6%).

Table 3. Nurses' Caring Attitudes Based on Caring Dimensions

Caring Dimension Indicator	Caring Category						Mean Item	N	Mean Per Item
	Poor		Moderate		Good				
	f	%	f	%	f	%			
<i>Positive Connectedness</i>	1	.5	19	9.2	45	69.2	19.75	4	4.93
<i>Assurance of Human Presence</i>	2	3.1	13	20.0	50	76.9	34.92	7	4.99
<i>Professional Knowledge and Skill</i>	1	1.5	10	15.4	54	83.1	26.28	5	5.25
<i>Attentive to Other's Experience</i>	3	4.6	11	16.9	51	78.5	19.95	4	4.98
<i>Respectful Deference</i>	1	1.5	22	33.8	42	64.6	19.03	4	4.75

Based on the distribution of caring attitudes among nurses at Regional General Hospital, the five dimensions of caring were rated as "good" by the majority of respondents: professional knowledge and skills (83.1%), attention to the experiences of others (78.5%), assurance of human presence (76.9%), positive connection (69.2%), and respectful courtesy (64.6%). Analysis of the averages showed that human presence had the highest total score (M=34.92), but professional knowledge and skills recorded the highest average per item (M=5.25), indicating that patients' families rated nurses' technical competence as the most consistent aspect of caring.

Table 4. Anxiety Levels Among Families of Patients in the Intensive Care Unit

Anxiety Category	Frequency	Percentage (%)
Severe Anxiety	2	3.1
Mild Anxiety	29	44.6
Moderate Anxiety	9	13.8
No worries	25	38.5
Total	65	100

Based on Table 4. the results of the distribution of family anxiety levels in the intensive care unit of Regional General Hospital show that the family anxiety level is mild anxiety in around 29 respondents (44.6%) and no anxiety in around 25 respondents (38.5%), with severe anxiety in around 2 respondents (3.1%) and moderate anxiety in 9 respondents (13.8%). It can be concluded that the anxiety levels of patients' families in the intensive care unit of Regional General Hospital fall into the categories of mild anxiety and no anxiety.

Table 5. Results of Spearman's Correlation Test

Variable	Spearman's rho correlation	p-value
Caring Attitude of Nurses with Family Anxiety Levels	-0.352	0.004

Based on Table 5, the results of the Spearman's correlation test show that the correlation coefficient value is -0.352 with a p-value of 0.004. The p-value is less than the significance level of 0.05 ($p < 0.05$), so it can be concluded that there is a significant relationship between the caring attitude of nurses and the level of anxiety of patients' families in the intensive care unit of Regional General Hospital. The correlation coefficient value of -0.352 indicates a weak or moderate relationship. This shows that although caring attitudes affect anxiety, there may still be other factors that also influence the anxiety of these families. Meanwhile, the opposite direction of the negative relationship means that the better the nurses' caring attitudes, the lower the anxiety levels of the patients' families, and vice versa.

Discussion

Table 2 shows the results of nurses' caring attitudes that 73.8% of intensive care nurses at Regional General Hospital exhibited good caring behavior, consistent with the findings of Praghlapati & Gusraeni (2021), who reported that 68% of nurses exhibited caring behavior. However, 26.2% of respondents rated caring as moderate to poor, indicating variation between shifts and between nurses, emphasizing the need for standardization of practice through SOPs and ongoing training (Anggoro et al., 2019). This inconsistency may be influenced by differences in workload, team composition, and supervision across shifts, necessitating a systematic approach to ensure consistent caring quality.

Analysis per dimension in Table 3 shows that the professional knowledge and skills dimension has the highest value ($M=5.25$) with 83.1% in the good category, reflecting the technical competence of nurses in operating sophisticated medical equipment, in line with Manav et al. (2023). The assurance of human presence dimension has the highest total mean ($M=34.92$) with 76.9% in the good category, where responsive nurses provide routine information to families which has a significant effect on reducing anxiety (Muliani, 2020). The attentive to others' experience dimension was rated as good by 78.5% of respondents ($M=4.98$), reflecting nurses' empathy that is consistent with Jean Watson's Human Caring theory in understanding the holistic needs of patients and families.

However, the positive connectedness dimension showed a lower rating (69.2%, $M=19.75$) because time constraints due to high workloads hindered quality interactions (Zamanzadeh et al., 2010). The respectful deference dimension was the lowest (64.6% good, 33.8% moderate, $M=19.03$) with families complaining about the nurses' lack of patience in explaining repetitive medical information. This phenomenon is multifactorial: high workloads with a non-ideal nurse-patient ratio, and the majority of families with lower-middle education

(50.8% elementary-junior high school) require simpler explanations (Rohana et al., 2018), so it is necessary to increase the nurse-patient ratio, therapeutic communication training, and develop easy-to-understand health education media.

Table 4 shows that the majority of patients' families experienced mild anxiety (44.6%) or no anxiety (38.5%), with only 13.8% experiencing moderate anxiety and 3.1% severe anxiety. These findings differ from previous studies. Sarapang (2022) reported that 52.9% of families experienced severe anxiety and 41.2% experienced panic despite good nursing care, while Siringoringo & Sigalingging (2023) found that 68% experienced moderate to severe anxiety. This difference can be explained by the good quality of nursing care (73.8%) at Regional General Hospital, which acts as a significant protective factor, in line with Muliani (2020) findings that therapeutic communication and the presence of nurses reduce the anxiety of ICU families.

Spearman's rho correlation analysis in Table 5 showed a significant negative relationship between nurses' caring attitudes and patients' families' anxiety levels ($r=-0.352$; $p=0.004<0.05$), with a weak to moderate correlation strength. This moderate correlation strength reflects the multifactorial reality of family anxiety at Regional General Hospital as a regional hospital, where factors such as the critical condition of patients, financial constraints, and a lack of structured psychological support cannot be fully moderated by the quality of nurses' caring alone. These findings are in line with the research by Rohana et al. (2018), which found a significant relationship between nursing care and ICU family anxiety ($p=0.002$), as well as Hariyanto & Triwahyuni (2022), who confirmed the relationship between caring and inpatient anxiety ($p=0.000$), reinforcing Theory of Human Caring argument that authentic caring relationships are the foundation of holistic healing.

Negative relationships have clinically significant implications: an increase in the quality of caring is followed by a decrease in family anxiety, supporting Watson's idea that caring creates a sense of security, trust, and emotional support (Firmansyah et al., 2019). The synergy of the caring dimension creates a strong psychological protective mechanism: assurance of human presence reduces uncertainty through effective communication and adequate information Muliani (2020), reinforced by attentive to other's experience which validates emotions and facilitates adaptive coping strategies (Suprajitno et al., 2020). The sense of security is further strengthened by professional knowledge and skills that reduce fear of a poor prognosis Kusnanto (2019), facilitating positive connectedness that gives families control and minimizes helplessness Widyastuti et al.(2020), and respectful deference that creates spiritual-emotional comfort in accordance with Indonesian cultural values (Sampouw et al., 2022).

Suggest Future Research

Longitudinal research is needed to explore the temporal dynamics of anxiety and identify critical periods during which caring interventions are most effective. Experimental studies using randomized controlled trials should test the effectiveness of Watson-based standardized caring protocols with outcomes of family anxiety, service satisfaction, and patient outcomes. Mixed-methods research with a phenomenological approach can explore the lived experience of families and the cultural dimensions of Indonesia in the perception of caring, combined with behavioral observation for triangulation.

Multi-site studies involve various types of hospitals and geographical areas, requiring multilevel modeling analysis to generalize findings. Research using structural equation modeling must identify mediating variables (therapeutic communication, trust, perceived

support) and moderating variables (gender, age, disease severity) in the caring-anxiety relationship. The development of culturally-grounded caring instruments for the Indonesian context is also important to improve measurement accuracy.

Conclusion

This study identified a significant negative relationship between nurses' caring attitudes and the anxiety levels of patients' families in the intensive care unit at Regional General Hospital ($r=-0.352$; $p=0.004$), empirically validating Jean Watson's Theory of Human Caring that authentic interpersonal relationships are the foundation of holistic healing. Although the majority of nurses demonstrated good caring (73.8%) and most families experienced mild anxiety or no anxiety (83.1%), substantial variations were found between caring dimensions, with professional knowledge and skills being the highest (83.1%) and respectful deference being the lowest (64.6%), indicating a gap between technical competence and the humanistic aspects of nursing care. The moderate correlation strength confirms that family anxiety is a multifactorial phenomenon influenced not only by nursing care but also by patient condition, demographic characteristics, and social support systems. These findings have practical implications for the development of SOPs for family anxiety management, ongoing therapeutic communication training, and strengthening the relational caring dimension at Regional General Hospital. They also open up opportunities for further research using longitudinal, experimental, and mixed- methods designs to deepen understanding of the mechanisms of caring in reducing family anxiety in the Indonesian cultural context.

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Author Contribution

All authors contributed to this research, from the methodology, data processing, review, revision, to the final manuscript for publication. All authors have read and approved the manuscript to be published.

Ethical Clearance

Binawan University Health Research Ethics Committee Number: 637/KEPK-UBN/XI/2025. Has undergone ethical review in accordance with 7 WHO standards.

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