

QUALITATIVE STUDIES

Navigating technology and compassion: A phenomenological exploration of humanistic nursing care in a high-tech ICU

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Abstract

Modern Intensive Care Units (ICUs) often prioritize technological stability over humanistic care, thereby potentially creating a mechanistic clinical environment. Because critical illness impacts both patients and families, examining their collective lived experiences is essential to confirm that 'high-tech' monitoring does not overshadow 'high-touch' human recovery. However, limited studies have explored the variables of lived experience among populations receiving care in these units. Therefore, this study explored the lived experiences of patients and families regarding humanistic nursing care in a high-tech ICU. To accomplish this, a qualitative descriptive phenomenological design was conducted over a four-month period beginning in October 2025. The study involved 20 participants recruited as 10 distinct dyadic pairs, comprising 10 patients and 10 primary family members. Furthermore, to address the unique clinical challenge of impaired consciousness in the ICU, only patients who had regained full consciousness (with a Glasgow Coma Scale score of 15), were stable, and possessed clear verbal communication skills were included. Data gathered from semi-structured interviews were analyzed using the Colaizzi method with a dyadic approach in order to effectively triangulate these dual perspectives. The study found five major themes emerged from the dyadic triangulation. Although most themes were shared experiences between both groups, their specific focuses diverged: patients' narratives centered on the sensory-technological experience of being attached to machinery, whereas families prioritized information updates, visual access, and advocacy roles. Nursing warmth and spiritual support (*dhikr* and *tawakkul*) were identified by both groups as critical factors that mitigated the "cold" atmosphere of medical devices. Humanistic care serves as the vital link between advanced technology and the spiritual-emotional needs. Optimal intensive care requires a synergy of technological precision and compassionate presence, with specific attention to the family's role as a pillar of care and the patient's sensory comfort.

Keywords: Humanism, Intensive Care Units, nurse-patient relations, qualitative research, spirituality

Introduction

Contemporary intensive care medicine has reached a pinnacle of technological advancement (Cecconi et al., 2026; Firment & Bednár, 2021). The implementation of equipment, such as next-generation mechanical ventilators and invasive hemodynamic monitoring systems, forms the cornerstone of physiological stability for critically ill patients (Lobo et al., 2024). However, this heavy reliance on medical instrumentation often creates a clinical paradox; the environment becomes increasingly mechanistic, shifting the focus of nursing care from attending to the human subject to merely managing the machine as an object (Browne & Cook, 2011; Hainich & Rabe, 2012). One of the clearest forms of distance is alarm fatigue. Frequent non-emergent alarms cause desensitization and increase nurses' cognitive workload (Haskell et al., 2026), often requiring them to prioritize alarm response over direct patient interaction. As a result, caring shifts from empathic communication and therapeutic touch to device management and data validation (Alsuyayfi & Alanazi, 2022). In the phenomenology perspective, care becomes oriented more toward "sounds and numbers" than toward patients' expressions and emotional needs (Edward, 2006; Errasti-Ibarrondo et al., 2019). Spirituality offers emotional security that medical devices cannot provide, promoting a sense of presence and compassionate connection within the high-tech Intensive Care Unit (ICU) environment (Nathan et al., 2021). However, the dominance of these technical aspects imposes a systemic burden on the psychological and spiritual dimensions of both patients and their families. The phenomenon known as Family Intensive Care Unit Syndrome (FICUS) provides compelling evidence that relative s of

ICU patients frequently experience acute emotional distress, ranging from pervasive anxiety to symptoms of Post-Traumatic Stress Disorder (PTSD) (Abdallah et al., 2025). This distress is often exacerbated by a perceived "cold" clinical atmosphere and a lack of spiritual support (Bulut et al., 2023; Torke et al., 2025). Such a reality underscores that hemodynamic stabilization is insufficient for achieving comprehensive human recovery without an authentic compassionate presence.

Jean Watson's Human Caring Theory serves as a crucial philosophical framework for reclaiming the essence of humanity in critical care nursing (Teófilo et al., 2026). With emphasizing transpersonal caring and deep therapeutic relationships, this theory provides a roadmap for the harmonious integration of physical, emotional, and spiritual needs (Wei & Watson, 2025). However, the implementation of humanistic care is shaped by sociocultural context. In many countries, caregiving emphasizes individual autonomy and professional services, with relatively limited family involvement (Kristanti & Effendy, 2019). In contrast, within Indonesia's collectivist culture, family presence in the ICU is regarded as a moral and spiritual obligation, with active participation in both daily care and healthcare decision-making (Agustina et al., 2024; Kristanti et al., 2019; Kristanti & Effendy, 2021). Spiritual and religious values form a strong foundation of caregiving practices, distinguishing Indonesia even from other Asian contexts that similarly emphasize family involvement (Martina et al., 2022). Despite extensive discussion of humanistic care in theory, its implementation within high-tech cardiovascular units remains underexplored. Existing literature largely prioritizes clinical outcomes and procedural metrics, leaving the lived experiences of those navigating technological intensity and human vulnerability insufficiently understood. To date, prior studies conducted at RSD KRMT Wongsonegoro have primarily focused on quantitative clinical outcomes and standard procedural protocols, without exploring lived experiences. The current study distinguishes by employing a qualitative phenomenological design with a dyadic approach—capturing the paired, interconnected perspectives of conscious patients (GCS 15) and their primary family caregivers. Within this specific ICU setting, humanistic nursing care is operationalized through empathetic bedside communication, thorough orientation of patients regarding monitoring devices, family information updates, and the integration of spiritual support, such as *dhikr* and prayer.

This gap necessitates a qualitative inquiry utilizing a phenomenological approach. Previous works in critical care settings have demonstrated that exploring lived experiences provides insights into how patients and families navigate the emotional strain of high-tech ICU environments, the perception of medical devices, and the vital role of humanistic nursing care (Choi et al., 2026; Taghinezhad et al., 2022). To provide clinical context, admission to the ICU is reserved for patients experiencing acute, life-threatening physiological instability, such as severe respiratory failure, acute cardiovascular crises, or critical post-operative states requiring continuous organ support and invasive monitoring. In these critical conditions, family members play roles as surrogate decision-makers, emotional and spiritual anchors, and primary advocates (Ahmed et al., 2025). Within Indonesia's collectivist culture, family involvement is regarded as a moral and spiritual obligation (Kristanti et al., 2019; Martina et al., 2022). However, existing Indonesian literature often treats family members as passive visitors or administrative contacts, creating a clear research gap regarding their active role as co-participants in care within high-tech settings. A 'high-tech ICU' is characterized by advanced multi-parameter continuous monitoring, mechanical ventilation, and automated therapeutic devices operated under high nurse-to-patient ratios. This differs from standard hospital wards in Indonesia, which rely on periodic manual assessments and lower staffing ratios without continuous invasive organ support. Although communication in the ICU is often challenging, the perspectives of conscious and communicative patients are indispensable; they serve as the primary witnesses to the 'high-touch' dimension of care that clinical data cannot record. Through this research design, the study seeks to explain how participants perceive and assign meaning to the presence of nursing care and spiritual support amidst the dominance of medical devices. This exploration aims to generate new insights for balancing technological prowess (high-tech) with compassionate depth (high-touch) to realize truly human-centered care in the intensive care trajectory.

Method

This study employed a qualitative descriptive phenomenological design to explore the lived experiences of patients and families as they navigate the intersection of clinical technology and humanistic care. Data collection was conducted by two authors (YP and SS), both of whom hold a Master of Nursing degree and possess extensive clinical experience in the ICU. To safeguard the authenticity of the findings and mitigate any perceived power imbalance, the researchers established a rapport with participants, patients and their families, by emphasizing their roles as empathetic listeners rather than clinical authorities. This approach promoted an environment of voluntary and transparent participation. To maintain analytical neutrality, the researchers practiced rigorous bracketing, consciously setting aside their clinical assumptions and personal insights regarding high-tech ICU care. This ensured an openness to the participants' raw

narratives, allowing the core essence of their experiences to emerge without the distortion of professional biases. This study was performed within the ICU of RSD KRMT Wongsonegoro, Semarang. Data collection was carried out over a period of four months, beginning in October 2025. Using a purposive sampling strategy, the study involved 20 participants. To ensure data richness and perspective triangulation, participants were recruited in dyadic pairs (10 patients and their respective 10 primary family members from the same kinship group). Inclusion criteria were categorized as follows patient inclusion criteria: regained full consciousness with a Glasgow Coma Scale (GCS) of 15; stable (e.g., mean arterial pressure ≥ 65 mmHg without vasopressor titration), able to communicate clearly, and minimum ICU stay of 48 hours. Meanwhile, the exclusion criteria were severe cognitive or neurological impairments (e.g., active delirium or dementia) preventing effective communication, clinical deterioration requiring emergency medical intervention during the study period, and refusal to provide informed consent. Given the involvement of the patients' relatives, distinct inclusion and exclusion criteria were also delineated for the family participants. The inclusion criteria for family were the primary caregiver or closest relative (spouse, parent, or adult child) who accompanied the patient, visited the patient at least once daily during the ICU stay, and minimum age of 18 years. Family exclusion criteria were severe psychiatric or cognitive disorders that impeded the ability to engage in interviews or give informed consent, and secondary family members not directly involved in care decisions.

Primary data were gathered through semi-structured, in-depth interviews. Primary data were gathered through semi-structured, in-depth interviews lasting 45–60 minutes, designed to explore the intersection of clinical technology and compassionate care. The interview guide comprised open-ended, phenomenological questions tailored to each participant group. Key questions for patients included can you describe your experience while being treated in the ICU? how did you feel regarding the use of medical devices (e.g., ventilators, monitors, IV lines)? did you feel that your emotional and spiritual needs were addressed during care? And what are your expectations for nurses in providing more humanistic care? Key questions for family members included can you describe your experience accompanying your family member in the ICU? what were your predominant feelings during the ICU stay (e.g., anxiety, fear, hope)? how was the communication with nurses or healthcare staff? what do you need to make the experience of accompanying a relative in the ICU more humanistic? To ensure privacy and prevent mutual influence, interviews were conducted separately for each participant in a private setting, scheduled during "clinical windows" to avoid disrupting medical procedures. Each session was audio-recorded following written consent, supplemented by field notes documenting non-verbal cues and the emotional atmosphere. The interview protocol followed a three-phase guide: first, identity profiling captured participant codes, age, gender, role, length of ICU stays, and medical diagnosis. Second, the core narrative exploration allowed patients to share experiences regarding the "human touch" amidst medical machinery, such as ventilators, monitors, and infusions, and their spiritual needs, while families discussed dominant emotions, staff communication, and care involvement. Finally, participants provided additional reflections before the session concluded. Data saturation was achieved at the 8th dyadic pair when no new codes emerged, with two additional pairs interviewed to confirm informational redundancy.

The interview recordings were transcribed verbatim and subjected to Thematic Analysis, guided by the phases outlined by (Braun & Clarke, 2006). Systematic data management and the initial coding process were facilitated by NVivo 12 software. To establish rigor and trustworthiness, the research applies Lincoln and Guba's framework (Lincoln & Guba et al., 1985). First, credibility is ensured through reflexive bracketing to set aside personal biases regarding ICU technology, in-depth semi-structured interviews, and peer debriefing with qualitative and nursing experts to validate interpretations. Second, transferability is achieved by providing thick, detailed descriptions of the high-tech ICU environment alongside verbatim participant quotes that illustrate each subtheme. Third, dependability is maintained via a comprehensive audit trail documenting raw transcripts, coding steps, and thematic mapping while adhering strictly to IPA's iterative, idiographic process. Finally, confirmability is established by grounding all superordinate themes directly in the raw data and including a reflexive positionality statement detailing the researcher's background and interpretive lens. Furthermore, the coding was performed independently by two researchers, WL and DS. The study adopted an inductive approach, allowing themes to emerge organically from the participants' voices rather than being shaped by pre-existing frameworks. Any discrepancies in the interpretation of codes or the development of themes were resolved through collaborative peer discussions between WL and DS until a final consensus was reached, ensuring the findings truly reflected the essence of the participants' experiences.

The study was conducted in accordance with ethical standards and received formal approval from the Health Research Ethics Committee of RSD KRMT Wongsonegoro, Semarang, under protocol number 187/Kom.EtikRSWN/X/2025. Participation was entirely voluntary, with written informed consent secured from all 20 participants, both patients and family members, after they were fully briefed on the study's objectives. The researchers

informed participants of their right to withdraw from the study at any point without any impact on the quality of care received. To protect privacy, all personal identifiers were removed and replaced with pseudonyms during the transcription process. Furthermore, given the high-acuity setting of the ICU, the timing of each interview was carefully coordinated with the medical staff to ensure that data collection never interfered with clinical procedures or the patient's recovery process.

Results

The participant cohort for this study comprised a total of 20 individuals, recruited as 10 distinct dyadic pairs to capture interconnected perspectives within the critical care continuum. Each dyad was balanced, consisting of one patient actively undergoing treatment within the ICU and their corresponding primary family member who served as their central support system throughout the illness trajectory. From a clinical standpoint, the patient participants were predominantly admitted to the high-tech unit due to acute, life-threatening medical crises, which required physiological monitoring and intensive life-support interventions. Specifically, these primary medical diagnoses spanned severe respiratory failure requiring advanced ventilatory support, acute cardiovascular emergencies—most notably ST-Elevation Myocardial Infarction (STEMI)—and end-stage chronic kidney disease experiencing acute exacerbations. A comprehensive breakdown of the participants' detailed socio-demographic backgrounds and clinical characteristics is tabulated in the subsequent baseline data overview of the patient (**Table 1**) and family (**Table 2**).

Table 1. Characteristic of the patient.

Code	Age (years)	Sex	Clinical diagnosis	Length of stay (days)
P1	55	Male	Chronic Kidney Disease	6
P2	60	Female	Chronic Kidney Disease	4
P3	43	Female	STEMI	5
P4	52	Male	Post-Laparotomy	4
P5	47	Male	Chronic Kidney Disease	5
P6	51	Female	STEMI	4
P7	46	Male	STEMI	4
P8	40	Female	STEMI	5
P9	52	Male	Chronic Kidney Disease	6
P10	49	Female	Chronic Kidney Disease	5

Table 2. Characteristic of the family.

Code	Age (years)	Sex	Role
K1	50	Female	Family Caregiver
K2	42	Male	Family Caregiver
K3	45	Female	Family Caregiver
K4	35	Female	Family Caregiver
K5	40	Male	Family Caregiver
K6	32	Female	Family Caregiver
K7	46	Male	Family Caregiver
K8	33	Female	Family Caregiver
K9	40	Female	Family Caregiver
K10	45	Male	Family Caregiver

The thematic analysis followed a dyadic approach, where data from patient-family pairs were analyzed using the Colaizzi method. This revealed five major themes that triangulate the lived experiences of both groups to ensure a comprehensive understanding of humanistic care in a high-tech environment. While most themes emerged as shared experiences (interconnected between the dyad), specific findings were distinguished: patients focused more on the sensory-technological experience, whereas families prioritized information updates and advocacy roles. The distinction of primary data sources for each theme is detailed in table (**Table 3**).

Table 3. Themes and categories.

Theme	Categories	Perspective/source
Emotional responses to critical illness	Negative emotions (fear, panic, anxiety), positive emotions (relief, security, gratitude)	Shared/both patients & families
Perception of ICU technology as a life-sustaining tool	Initial perception (fear of devices), progressive perception (technology as a lifesaver)	Primary/patients (sensory experience)
Humanistic nursing interaction as a source of comfort	Nursing attitudes (friendly, responsive), environment (sense of safety)	Shared/both patients & families
Spirituality as a coping mechanism	Spiritual practices (prayer, dhikr), emotional support (guidance)	Shared/ both patients & families
Family communication and involvement as pillars of humanistic care	Communication (updates), family involvement (participation, visual access)	Primary/families (advocacy role)

Theme 1: Emotional responses to critical illness in the ICU

Theme 1 illustrates the intense emotional experiences faced by patients and their families when dealing with critical conditions in the ICU. Initial reactions were dominated by fear, panic, and anxiety due to the uncertain situation and the complex ICU environment. These feelings gradually transformed into a sense of relief, security, and gratitude after the patients received intensive treatment and began to show improvement. The following participant statements illustrate this perspective:

"When I was outside and saw my mother's condition like that... my feelings were completely overwhelmed, miss." (K2)

"I was rushing here and saw my mother struggling/gasping; I couldn't bear it. But once in the ICU, she was handled immediately, and I am very grateful, Alhamdulillah." (K3)

"Little by little, there was progress. When the equipment was about to be attached, I felt so much pity, but by morning when it was removed, I felt very grateful." (K5)

"It was scary for me. When I first entered, I didn't understand anything, so I was afraid... but after regaining consciousness and seeing all the equipment, I realized there was a blessing behind it." (P5)

"I feel comfortable now because the care is good, and whenever I ask for help, I am always assisted." (P6)

"I felt worried, miss... anxiety was definitely there. But I kept asking for the grace of a speedy recovery." (K1)

"Yes, I was anxious and afraid, but hope was the strongest feeling, miss." (K4)

"Alhamdulillah... initially I was confused about what would happen, but I surrendered to the Giver of Life." (P7)

"Effort, prayer, and surrender. That is what kept me calm during my time in the ICU." (P3)

Theme 2: Perception of ICU technology as a life-sustaining tool

Theme 2 shows that although ICU equipment initially caused fear, patients and families later viewed the technology as a helper that increased their sense of security. Understanding the function of the equipment shifted their perception from anxiety to trust in the technological interventions. The following participant statements illustrate this perspective:

"When the tools were about to be attached to my mother, I felt so sorry for her... but the nurse said they would be removed gradually. And it's true, this morning I saw she looked fresher and the tools were being reduced. So, I became calmer because it turned out those tools really helped her." (K2)

"I feel the ICU equipment is a helper for my struggling family member; I am very grateful, miss." (K7)

"I depend on the medical equipment, but it makes me confident that my partner will survive." (K8)

"I thought like this... if I didn't go through this path (technology), I wouldn't have been saved." (P7)

"As for the treatment, I just followed along. All the equipment—the ventilator, IV, monitor—I accepted it because that is what saved me." (P5)

"I have had equipment like this attached before, so I'm used to it. But here it is better, miss; it feels more monitored and I feel calmer." (P6)

"I feel everything is helpful, including the medical equipment in the ICU, so I can track my progress." (P3)

"It felt very helpful for my recovery; those tools seemed scary but they helped me." (P1)

"I am actually grateful I was saved by medical technology. There was no fear at all." (P4)

Theme 3: Humanistic Nursing Interaction as a Source of Comfort

Theme 3 highlights that interpersonal interaction with nurses is the most decisive factor in the comfort of patients and families in the ICU. Nursing attitudes that are friendly, polite, and responsive, along with the ability to provide a sense of security, make the care experience more humanistic. The following participant statements illustrate this perspective:

"Alhamdulillah, I feel relieved and can rest well, miss. The nurses are all very good." (P3)

"Friendly, skillful, polite, and well-mannered... I truly felt the care was excellent." (P5)

"I can rest bit by bit and feel more comfortable here, assisted by nurses who are friendly and helpful." (P6)

"At another hospital, I was once yelled at and treated rudely... but here, the nurses are sweet, attentive, and all of them are kind." (P1)

"What keeps me calm is the nurses here... I am encouraged and assisted whenever I ask about the patient." (K3)

"It's comfortable and safe; I didn't feel any difficulty. Even asking the security staff was met with friendliness; the nurses are also very friendly." (K3)

"I have been here three times, and it is always the same... the service is excellent." (K5)

"From the nurses, doctors, to the security—everyone helped me when I was in a panic." (K9)

"The nurses keep me calm because they say my condition is getting better and it is time to recover." (P7)

"Every time they give medication, they explain its function so I can be healthier." (P2)

Theme 4: Spirituality as a Coping Mechanism

Theme 4 describes spirituality as a source of tranquility and strength when facing ICU uncertainty. Patients and families relied on prayer, *dhikr* (remembrance), and surrendering to God. Spiritual support from nurses or family members also reinforced emotional calm. The following participant statements illustrate this perspective:

"I was guided to perform dhikr and pray... so I felt calm." (P2)

"I also always surrender to Allah. Whenever anything happens, I feel cared for and constantly checked upon. That makes me stronger." (P3)

"I can pray (solat) here comfortably... even if we have to find a quiet corner, it can still be done." (K3)

"While accompanying the patient, I continued to pray, surrender, and hope that God would provide the best way." (K3, K5)

"Alhamdulillah... while praying, everything went smoothly. I was still afraid, but I surrendered." (K4)

"We have made the effort, prayed, and felt grateful." (K1)

"Our children were also in a panic, but everyone strengthened each other through prayer." (K7)

"I even asked to be prayed for, and the nurse answered kindly, 'Yes, I will pray for your speedy recovery.' That made my heart feel at peace." (P7)

"The nurses here are friendly and kind... when I was sad, I was reminded to pray, and because of that, I could stay strong while waiting." (K6)

Theme 5: Communication and Family Involvement as Pillars of Humanistic Care

Theme 5 shows that open communication and family involvement are essential in creating a humanistic care experience. Condition updates, explanations of procedures, and visual access to the patient provided a sense of control and peace for the family. The following participant statements illustrate this perspective:

"The communication is very warm and good, miss. Any question is answered, even though we are not allowed to be close." (K5)

"I was worried whether he was hungry or cold, but the security also calmed me down so I could stay patient." (K3)

"So even though we cannot be near, we still feel cared for." (K9)

"I feel involved... because sometimes he asks the family to come. I am also always informed about his condition. So, I feel I know what is happening; I'm not kept in the dark." (K6)

"The nurses always tell me about my family member's condition... it makes me calm." (K4)

"I was given informed consent and an explanation of what actions would be taken for my mother." (K8)

"So, we feel we know and understand what is happening. My suggestion is, even if we cannot enter, at least we can see clearly through that window... so that there is trust." (K2)

"Even though I cannot be near the patient, I can ask the nurse, and it helps me feel more confident that my family will be safe and healthy again." (K7)

"I was asked to buy drinks and patient needs, so I did. I feel cared for as well, being able to help with needs inside... I'm happy when told the condition is improving, miss." (K9)

"The most important thing is that everything is communicated, as that keeps us calm as a family." (K1)

Discussion

The findings showed a significant shift in perception and emotion during the critical care period. In the initial phase of treatment in a high-tech ICU, the patient's family experiences negative emotional responses in the form of fear, anxiety, and panic. ICU environments filled with advanced medical equipment, alarm sounds, and patients' dependence on machines are often perceived as a threatening situation and cause psychological distress for families (Harlan et al., 2020). During this initial phase, the intensive care technology is experienced as a foreign and threatening presence, overshadowing its role as a humanistic care. Over time, perceptions of ICU technology show changes. Effective information and communication by nurses and health workers plays an important role in helping families understand the function and purpose of using medical devices. This understanding lowers anxiety and shifts the perception of the family, from fear to acceptance of technology as a means of supporting the patient's life (Bala et al., 2025). In addition to communication, consistent emotional support and an empathetic approach from the nurse help families develop adaptive coping mechanisms. Family involvement in the care process reinforces a sense of security and builds a positive perception of technology, which is no longer seen as a barrier to human connection, but as part of caring nursing practice (Thornton et al., 2017). This change in perception is further strengthened when families witness the positive impact of technology on patients' conditions. The improvement of the clinical status of patients makes ICU technology interpreted as a life-saving tool (Olsen et al., 2024).

A pivotal finding of this study underscores that interpersonal engagement with nursing staff represents the fundamental cornerstone of participant comfort within the ICU of RSD KRMT Wongsonegoro. In an environment often perceived as cold or intimidating due to pervasive medical technology, nursing attitudes characterized by warmth, professionalism, and prompt responsiveness proved instrumental in mitigating environmental stressors. In the perspective of humanistic care, nurses at this facility transcend their roles as mere technical providers; they emerge as vital anchors of emotional stability by offering transparent communication and authentic concern for the lived experiences of both patients and their families. This observation aligns with the core tenets of Humanistic Nursing Theory, which posits that the essence of nursing lies in the meaningful "presence" and the existential connection between the caregiver and the patient (Taghinezhad et al., 2022). Within this framework, effective communication and emotional support are peripheral tasks and essential interventions that reduce psychological distress and elevate satisfaction (Wang & Wang, 2025). Empathy, as identified in our thematic analysis, serves as the primary conduit for a therapeutic relationship. With demonstrating a genuine understanding of the participants' subjective fears, nurses are able to deliver care in perfect form (Ozdemir & Kaplan, 2024). Furthermore, the positive impact of these humanistic interactions extends to tangible health improvements, as compassionate engagement has been shown to assist patients in better managing their condition (Al-Ganmi et al., 2024; Alodhialah, 2025). However, sustaining this level of "high-touch" care in a "high-tech" setting requires intentional institutional support. Our findings suggest that ongoing training in communication and emotional intelligence is vital for nurses to refine their ability to provide holistic care. This is crucial given the identified challenges, such as heavy workloads and resource constraints, which can often impede a nurse's capacity to maintain a consistent compassionate presence at the bedside (Choi et al., 2025). This study reaffirms that in the high-stakes environment of the ICU, the humanistic bond remains the most powerful tool for healing.

The findings of this study reveal that spirituality functions as the fundamental pillar of resilience. The thematic analysis demonstrates that specific spiritual practices serve as the primary mechanisms through which participants transmute acute anxiety into emotional equilibrium. From a phenomenological perspective, this phenomenon represents a manifestation of transcendental resilience, where religious conviction acts as a cognitive and emotional anchor. The frequent mention of *tawakkul* shows that it acts as a mental defense mechanism. With leaving outcomes to a higher power, participants greatly reduced the mental strain and anxiety caused by clinical uncertainty (Akeke et al., 2025). These results corroborate existing literature which posits that in critical care settings, spiritual dimensions are perceived to possess a coping efficacy that equals, or even surpasses, technical medical interventions (Krok, 2008). Furthermore, the data emphasizes that humanistic nursing interaction is linked to the facilitation of these transcendental needs. Participants identified that the emotional and spiritual support provided by nurses instills a feeling of security. This aligns with the principles of holistic nursing care, which views the individual as a biopsychosocial-spiritual entity

(Pavković et al., 2024). When healthcare providers spiritual supports, they improve patient satisfaction and promote the mental stability for recovery. However, the successful integration of spirituality as a coping tool depends on a synergy between nursing competence and institutional policy. The ability of participants to maintain their resilience is significantly influenced by an ICU environment that remains open to the sacred dimensions of the human experience. Consequently, this study demonstrates that to maintain humanistic care, an ICU must balance technological capabilities with spiritual support systems, keeping compassion at the center of critical care.

The findings underscore that family engagement constitutes a fundamental pillar in the delivery of safe and effective care in the ICU. Family presence is not just administrative paperwork; it is a vital clinical intervention. Family builds trust that reducing helplessness relatives often feel during a critical illness (Ahmed et al., 2025). Given that many patients lose the capacity for independent decision-making, families function as essential surrogate decision-makers to ensure that the patient's values and preferences remain central to all medical interventions (Curtis & White, 2008). The present study also highlights how the integration of digital technology has redefined familial engagement. The utilization of communication tools allows families to obtain real-time visual updates on the patient's condition. In this study, such visual access was identified as a primary source of emotional reassurance for participants. Furthermore, these technologies do more than facilitate two-way communication, they empower families to participate actively in multidisciplinary conferences and complex clinical decision-making processes (Shin et al., 2023). This technological integration reduces the social and psychological isolation for both patients and their loved ones. Nevertheless, the efficacy of this engagement is frequently hampered by frustration over delayed information and barriers to patient advocacy. The findings of this study indicate that transparent and routine communication regarding clinical progress is the primary remedy for these obstacles. Good communication between healthcare providers and family members improves medical decisions (Sharkiya, 2023). It also protects the mental health of relatives after the ICU experience. Consequently, there is a clear mandate for high-level communication competence and interdisciplinary collaboration to ensure that information is accurate (Vuong et al., 2019). An ideal ICU environment is realized when communication technology is leveraged to honor the needs of the family and integrate them authentically into the care ecosystem (Checa-Checa et al., 2025).

The findings of this study emphasize the necessity of integrating "high-tech" proficiency with a "high-touch" humanistic presence within intensive care settings. To mitigate the psychological distress associated with a mechanistic ICU environment, nursing practice must evolve to prioritize emotional intelligence and empathetic communication. Healthcare institutions should formalize spiritual support by accommodating religious practices for all religion. Although the depth of the qualitative insights gained, this study has several limitations. First, the requirement for 'good communication skills' excluded patients with severe cognitive or neurological impairments who remained sedated. Second, relying on retrospective interviews may have introduced recall bias due to the traumatic nature of critical illness. Finally, the narrow focus on cardiovascular and renal complications means that other ICU sub-specialties, such as trauma or neurosurgery, require further investigation.

Conclusion

This study concludes that humanistic nursing care is the essential link between advanced technology and the spiritual-emotional needs among patients and families. Initial fears regarding medical instrumentation were mitigated through compassionate nursing presence, transparent communication, and family engagement. Furthermore, *dhikr* and *tawakkul* serves as a primary pillar of resilience amidst clinical uncertainty. Optimal intensive care requires a deliberate synergy of technological precision and humanistic values to ensure that "high-tech" interventions are balanced with "high-touch" compassion to preserve human dignity. Additional studies are also needed to explore the barriers and moral distress experienced by nursing staff attempting to balance high-tech demands with compassionate care across diverse hospital or countries.

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AI statements

Grammarly was utilized as an automated language assistant strictly for English grammar checking, spellchecking, and refining sentence readability. No generative AI tools were used for data collection, qualitative data analysis, thematic

interpretation, or manuscript drafting. All intellectual contributions, analytical findings, and conclusions remain entirely the original work of the human authors.

Author's declaration

DS were responsible for the study conception and design. Data collection through interviews was conducted by YP and SS, while data processing and analysis were performed by WL and DS. DS drafted the initial manuscript. All authors (DS, WL, YP, and SS) contributed to the critical revision of the manuscript for important intellectual content, gave final approval for the version to be published, and agreed to be accountable for the integrity and accuracy of all aspects of the research.

Availability of data and materials

All data and materials related to this study are presented within this manuscript. Any inquiries or requests regarding the datasets obtained should be directed to the corresponding author via email.

Competing interests

The authors have no conflicts of interest to disclose.

Ethical clearance

The study was conducted in accordance with ethical standards and received formal approval from the Health Research Ethics Committee of RSD KRMT Wongsonegoro, Semarang (Protocol No. 187/Kom.EtikRSWN/X/2025).

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Publishers and journal's note

This research design is highly appropriate for capturing the lived experiences of patients and families admitted to a high-tech ICU because it provides an in-depth understanding of the psychological vulnerabilities that clinical metrics often ignore. Experience serves as a fundamental element that reveals the subjective meanings and shared psychological adaptation occurring within mechanistic clinical environments. The Editor-in-Chief appreciated this excellence work.

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Authors' insight

Key points

- This study establishes how initial fear of ICU technology in both patients and families is transformed into trust through transparent nursing communication.
- The findings identify interpersonal nursing interaction, characterized by warmth, professionalism, and responsiveness, as the most decisive factor in mitigating the mechanistic stress of a high-tech ICU.
- The research highlights the practices of *dhikr* and *tawakkul* as a core coping mechanism that provides critical emotional stability for the patient-family dyad during critical illness.

Emerging nursing avenues

- How can ICU nurses balance "high-tech" monitoring duties with the "high-touch" humanistic presence required by families?
- To what extent does structure family involvement and visual access through digital tools reduce long-term psychological distress for ICU survivors and their relatives?
- What specific institutional protocols can be implemented to better accommodate the diverse spiritual and religious coping needs of patients in the ICU?

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