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Effectiveness Of Structured Spiritual Care Models in Improving Psychological and Physiological Outcomes in Intensive Care Unit (ICU) Patients: A Systematic Review

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SYSTEMATIC REVIEW

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ABSTRACT

Despite their critical role in patient well-being, spiritual needs are often overlooked in intensive care settings. Addressing these needs through structured interventions may improve patients' psychological and physiological outcomes in Intensive Care Unit (ICU). This systematic review aims to identify and evaluate various spiritual care models implemented in ICU settings and their impact on patient outcomes. A systematic search was conducted across six databases (PubMed Central, ScienceDirect, Sage Journals, Cambridge Core, Cochrane Library, and ProQuest) for studies published up to 2023. Eligible studies met the following criteria: (i) experimental design, (ii) spiritual care interventions, and (iii) ICU implementation. The screening process was conducted in two phases: title and abstract screening, followed by full-text assessment, with methodological quality evaluation. A total of 6,975 articles were identified, and 11 studies involving 842 participants met the inclusion criteria. Three distinct spiritual care models were identified: Chaplain-led picture-guided spiritual care, HeartTouch Technique, and Islamic-based spiritual care. Chaplain-led picture-guided spiritual care was particularly effective in reducing anxiety, while Islamic-based spiritual care, particularly Quran recitation, demonstrated significant benefits in reducing stress and promoting emotional well-being. These interventions demonstrated significant benefits, including reductions in stress and anxiety (reported in 4/11 studies), improvements in well-being (3/11 studies), and decreased feelings of isolation (2/11 studies). No significant adverse effects were reported. Spiritual care interventions in ICU settings provide psychological and emotional benefits for patients, reducing anxiety, stress, and isolation.

Key Messages:

- Spiritual care in ICUs reduces stress, anxiety, and isolation in patients.
- Three effective models were identified: Chaplain-led, HeartTouch, and Islamic-based care. These interventions enhance psychological well-being and support holistic ICU care. Findings offer practical and impactful insights for ICU healthcare practices.

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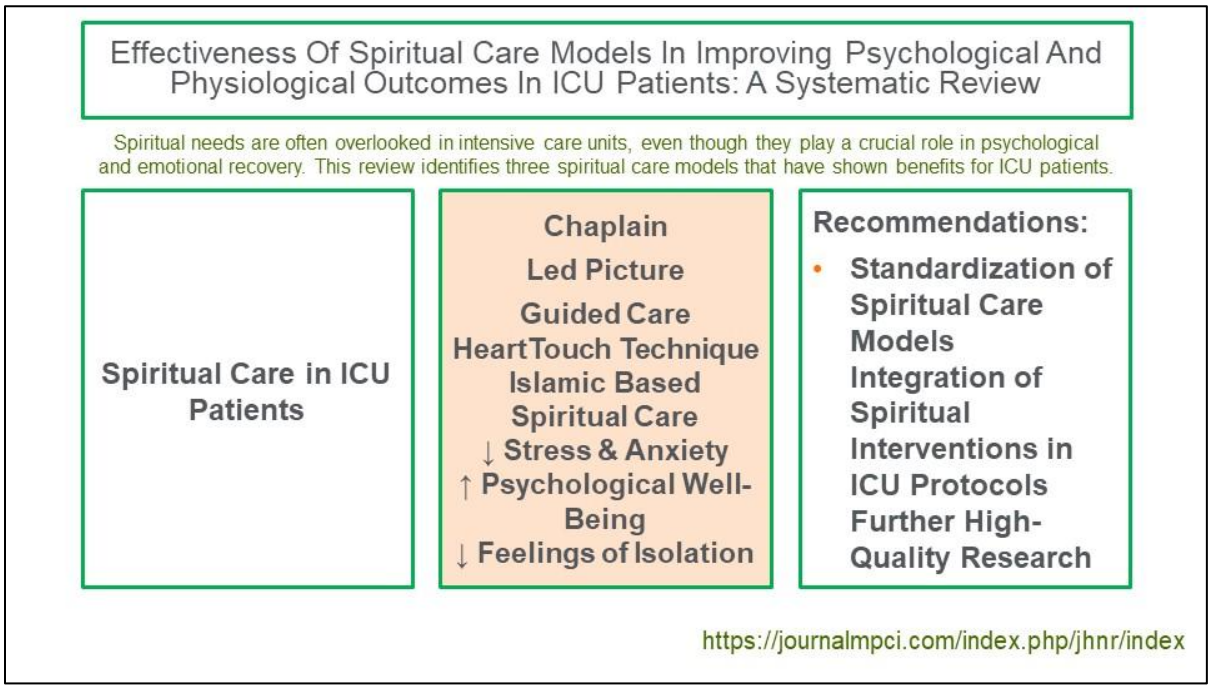
GRAPHICAL ABSTRACT



INTRODUCTION

The Intensive Care Unit (ICU) is a specialized hospital department that provides continuous monitoring and life-sustaining interventions for critically ill patients. These patients often experience a combination of physical and psychological stressors, which can significantly impact their overall well-being. Physical stressors include pain, discomfort, sleep disturbances, and sensory overload due to medical devices and ICU environmental factors. Psychological stressors, on the other hand, stem from loss of autonomy, fear, anxiety, and limited understanding of medical procedures (1) (2)(3). The interplay between physical and psychological distress in ICU patients is well-documented. Unmanaged pain exacerbates anxiety, while heightened anxiety amplifies pain perception. Sleep disturbances caused by excessive noise, bright lighting, and continuous medical interventions further contribute to fatigue, cognitive impairment, and emotional distress. These factors collectively compromise the psychological resilience and recovery of ICU patients (4) (5) (6). Psychological outcomes such as reduced anxiety, stress, and feelings of isolation, as well as physiological indicators like improved vital signs and sleep patterns, are commonly used to evaluate the impact of supportive interventions in this setting.

In recent years, spiritual care has gained recognition as an integral component of holistic patient management in the ICU. Spiritual interventions, including prayer, meditation, scripture reflection, and guided religious rituals, have been shown to provide emotional relief, enhance coping mechanisms, and improve overall well-being for patients and their families (5)(6). Despite growing evidence supporting spiritual interventions in critical care settings, there remains a lack of consensus on standardized spiritual care models applicable to ICU patients. Several studies have explored the role of spiritual care in ICU settings, yet findings remain inconsistent and fragmented. While some studies suggest significant psychological and physiological benefits, others highlight implementation challenges, cultural differences, and varying patient receptiveness(5)(6). These discrepancies underscore the need for a systematic synthesis of existing evidence to determine the effectiveness and applicability of different spiritual care approaches.

To address this gap, this systematic review aims to analyze various models of spiritual care implemented in ICU settings, evaluating their impact on patient well-being and identifying best practices for integration into critical care. The findings from this study will contribute to the development of evidence-based spiritual care frameworks, ensuring more comprehensive and patient-centered ICU

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management.

METHODS

Eligibility criteria

The eligibility criteria for this systematic review were established using the Population, Intervention, Comparison, and Outcome (PICO) framework to ensure methodological rigor and relevance. The population of interest included patients admitted to the Intensive Care Unit (ICU), regardless of their primary diagnosis, age, or length of stay. The intervention examined in this review consisted of various spiritual care models implemented in ICU settings, including chaplain-led interventions, mindfulness-based spiritual therapies, and religious-based practices. Studies were included if they compared spiritual care interventions with standard ICU care, which may involve routine psychological support or no structured spiritual intervention.

The primary outcomes assessed in this review encompassed both physical and psychological well-being, including pain levels, hemodynamic stability, anxiety, depression, stress, and coping mechanisms. Studies were eligible for inclusion if they employed experimental or quasi-experimental designs, were published in peer-reviewed journals between 2015 and 2023, and were available in full-text English versions. Studies were excluded if they focused on spiritual care interventions outside ICU settings, such as palliative care, oncology units, or long-term care facilities. Additionally, case reports, reviews, commentaries, and opinion pieces were excluded. Articles that lacked clear methodological rigor or failed to specify measurable patient outcomes were also omitted.

Sources

A comprehensive systematic search was conducted across the following electronic databases: PubMed Central, ScienceDirect, Sage Journals, Cambridge Core, Cochrane Library, and ProQuest. Google Scholar was used as a supplementary source to identify additional relevant studies. The search strategy employed Medical Subject Headings (MeSH) terms and Boolean operators (e.g., “spiritual support” OR “religious therapy” AND “intensive care” OR “ICU”) to enhance precision. No restrictions on publication year were applied to ensure a comprehensive synthesis of existing evidence, including both seminal and recent studies.

Search strategy

A systematic literature search was conducted across six major electronic databases, including PubMed Central, ScienceDirect, Sage Journals, Cambridge Core, Cochrane Library, and ProQuest. Google Scholar was used as a supplementary source to identify additional relevant studies from reference lists.

The search strategy employed Medical Subject Headings (MeSH) terms and Boolean operators, as follows:

- PubMed Central & Cochrane Library: ("spiritual care" [MeSH] OR "religious therapy" [MeSH]) AND ("intensive care units" [MeSH] OR "ICU" [MeSH])
- ScienceDirect, Sage Journals, Cambridge Core, ProQuest: ("spiritual support" OR "religious therapy") AND ("intensive care" OR "ICU")
- Filters applied: Peer-reviewed journal articles, full-text availability, and English-language publications.
- No restrictions on publication year were applied to ensure a comprehensive synthesis of both seminal and recent research.
- Manual screening of reference lists from included studies was also performed to identify additional sources.

Two independent reviewers conducted The final search between September 13–15, 2023. Discrepancies in study selection were resolved through discussion or consultation with a third reviewer.

Selection process

This part specifies the methods used to decide whether a study met the review's inclusion criteria, including how many reviewers screened each record and each report retrieved, and whether they worked independently. If applicable, this may point out details of automation tools used in the process.

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Data items

The extracted data included three key components:

a. Patient characteristics, including ICU patients of all age groups (neonates, children, and adults) who had been on mechanical ventilation for more than six hours. Additional details such as sample size, group allocation (intervention vs. control), and study location were also recorded.
b. Spiritual care model, describing the type of intervention (e.g., chaplain-led spiritual care or image-guided techniques), delivery method (face-to-face, audio, or visual-based), and the duration and frequency of the therapy.
c. Study outcomes, encompassing psychological and physiological changes observed after the spiritual care intervention. Primary outcomes included anxiety levels measured using validated scales, pain perception, hemodynamic stability, and other reported effects such as patient satisfaction or ICU length of stay.

Study risk of bias assessment

The risk of bias in the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools, which were applied based on study design. The JBI checklist for Randomized Controlled Trials (RCTs) was used for experimental studies, while the JBI checklist for quasi-experimental studies was applied to non-randomized studies. Two independent reviewers conducted the risk of bias assessment. Any discrepancies in scoring were resolved through discussion or consultation with a third reviewer. The assessment focused on key domains, including randomization, allocation concealment, blinding, completeness of outcome data, and selective reporting. For studies with unclear risk, the authors attempted to clarify uncertainties by referring to supplementary materials or contacting the original researchers.

Effect measures

This part specifies, for each outcome, the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results. Since this systematic review does not include a meta-analysis, the effect measures are reported as presented in the included studies. Binary outcomes are expressed as risk ratio (RR), odds ratio (OR), or hazard ratio (HR), while continuous outcomes are reported as mean difference (MD) or standardized mean difference (SMD) where available. Given the heterogeneity in study designs, populations, and interventions, findings are synthesized narratively. Variations in effect measures across studies are acknowledged, ensuring a comprehensive qualitative synthesis of the results.

Synthesis methods

A narrative synthesis approach was employed to analyze and interpret the extracted data, considering the heterogeneity in study designs, interventions, and outcome measures. Due to variations in the indicators used to assess the effects of different spiritual support models, a meta-analysis was not conducted. The synthesis process involved identifying key themes, comparing findings across studies, and grouping interventions based on similarities in their approach and reported outcomes. The results are summarized in Table 2, categorizing spiritual support models and their respective effects on ICU patients.

RESULTS

A comprehensive literature search was conducted from September 13 to 15, 2023, using seven electronic databases: PubMed Central, ScienceDirect, Sage Journals, Cambridge Core, Cochrane Library, ProQuest, and Google Scholar. The search was restricted to articles published between 2015 and 2023, yielding 7,396 records. In the first screening stage, we assessed titles for relevance, resulting in the exclusion of 7,350 articles due to topic incompatibility. A total of 46 articles proceeded to the abstract screening stage, where 34 articles were excluded because they did not include spiritual support or religious activity as an intervention. This left 12 articles for full-text review. In the final selection stage, 11 articles met the inclusion criteria, while one article was excluded for not meeting the criteria for experimental research. Figure 1 presents the study selection process.

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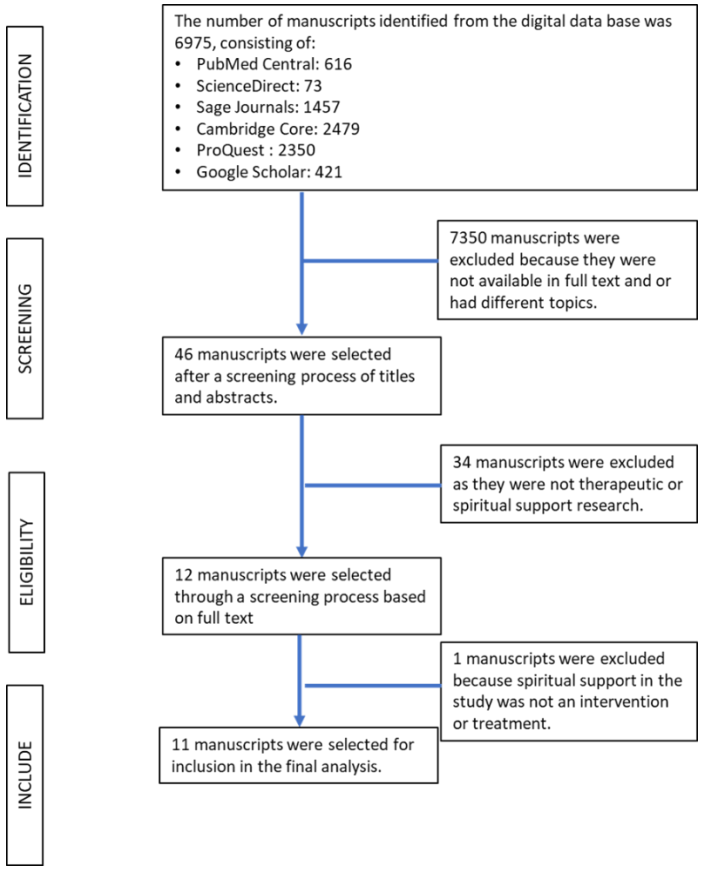

Figure 1. Article Selection Process

Study characteristics

The final selection included 11 studies that met the inclusion and exclusion criteria. These studies varied in design, including Randomized Controlled Trials (RCTs), true experimental, quasi-experimental, and pre-experimental studies. The characteristics of the selected studies, including author details, publication year, study title, and research design, are summarized in Table 1.

Table 1. Description of Selected Article

No	Author	Year	Title	Design
1	Joel N. B; Armeen D. Poor; Sarah M. Buckley; Komal R. Patel; David J. Lederer; Nathan E. Goldstein; Daniel Brodie; & Matthew R. Baldwin	2016	A Novel Picture Guide to Improve Spiritual Care and Reduce Anxiety in Mechanically Ventilated Adults in the Intensive Care Unit	a quasi-experimental study
2	Iwan Purnawan; Arif Imam Hidayat; Sidik Awaludin; Galih Noor Alivian; Eman Sutrisna ; Ikit Netra Wirakhmi	2023	Unraveling The Impact of Religious Therapy On Stress Biomarkers In Icu Patients - A True Experimental Study	True-Experimental
3	Iwan Purnawan, Arif Imam Hidayat, Eman Sutrisna, Galih Noor Alivian, Ikit Netra Wirakhmi	2021	Efficacy of listening to murattal in reducing the pain experienced by ICU patients	A Quasi Esperimental
4	Hossin Fasihizadeh; Khadijeh Nasiriani	2020	Effect of Spiritual Care on Chest Tube Removal of Anxiety and Pain in Heart Surgery in Muslim Patients (Shia and Sunni)	RCT

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No	Author	Year	Title	Design
5	Maryam Marofi; Fatemeh Abedini ; Maryam Shirazi; Zohreh Badiei ; Zahra Baghersad ; Farzaneh Nikobakht	2018	Effect of the sound of the holy Quran on the physiological responses and pain caused by blood sampling from the heels of hospitalized neonates at the neonatal intensive care unit	RCT
6	Iwan Purnawan; Sri Setiyarini ; Probosuseno Probosuseno ; Yunita Widyastuti.	2022	Effect of the Dreamer Spiritual Therapies on Saliva Cortisol Hormone and Pain Score Patients in the Intensive Care Unit: A True-experimental Study	A True-experimental Study
7	Siti Awa Abu Bakar	2015	Effects Of Holy Quran Listening On Physiological Stress Response Among Muslim Patients In the Intensive Care Unit	A Quasi-Experimental
8	Dina Sulviana Damayanti ; Djauhar Ismail; Warsiti	2018	The Effect Of Listening To Murottal Qur'an On The Oxygen Saturation Level In Preterm Infants In The Neonatal Intensive Care Unit	Pre-experimental
9	Nurhusna; Fadliyana Ekawaty; Andika Sulistiawan	2019	The Effect of Murottal Alquran Therapy on Heart Rate, Respiration Rate, Saturation Oxygen of Premature Infants Using Mechanical Ventilation in the Neonatal Intensive Care Unit	Pre experimental
10	Vahid Naseri-Salahshour; Shokoh Varaei; Mahbobeh Sajadi; Setareh Tajdari; Masoumeh Sabzaligol; Neda Fayazi	2018	The effect of religious intervention on the level of consciousness of comatose patients hospitalized in Intensive Care Unit: A randomized clinical trial	RCT
11	Priyanto ; Achmad Fauzi Kamal ; Debie Dahlia ; Idia Indar Anggraeni	2020	The Effectiveness Of Psychoreligious Therapy: Murottal Al Qur'an On Chest Pain Level Of The Patient In Intensive Care Unit	Pre eksperimental

Table 1 shows that the selected studies were published between 2015 and 2023. Notably, 72% of the studies employed a control group, enhancing the internal validity of the findings. The studies primarily investigated the effects of various spiritual support interventions on ICU patients, including religious therapy, recitation of sacred texts, and spiritual care models, assessing outcomes such as anxiety, pain, physiological responses, and consciousness levels (7).

Risk of bias in studies

The quality assessment of the included studies was conducted using the Joanna Briggs Institute (JBI) critical appraisal tools. The assessment was tailored to the study designs: Randomized Controlled Trials (RCTs) and true experimental studies were evaluated using the JBI checklist for RCTs, while quasi-experimental and pre-experimental studies were assessed using the JBI checklist for quasi-experimental studies (8). Two independent reviewers performed the appraisal, and discrepancies were resolved through discussion.

Figure 2 illustrates the quality assessment results of the included studies. Three studies studies (9, 10, 11) demonstrated high methodological quality, meeting 100% of the criteria for rigorous RCT research. However, two studies (12,13) exhibited limitations, particularly in the blinding process during data collection and intervention delivery, which may introduce potential bias.

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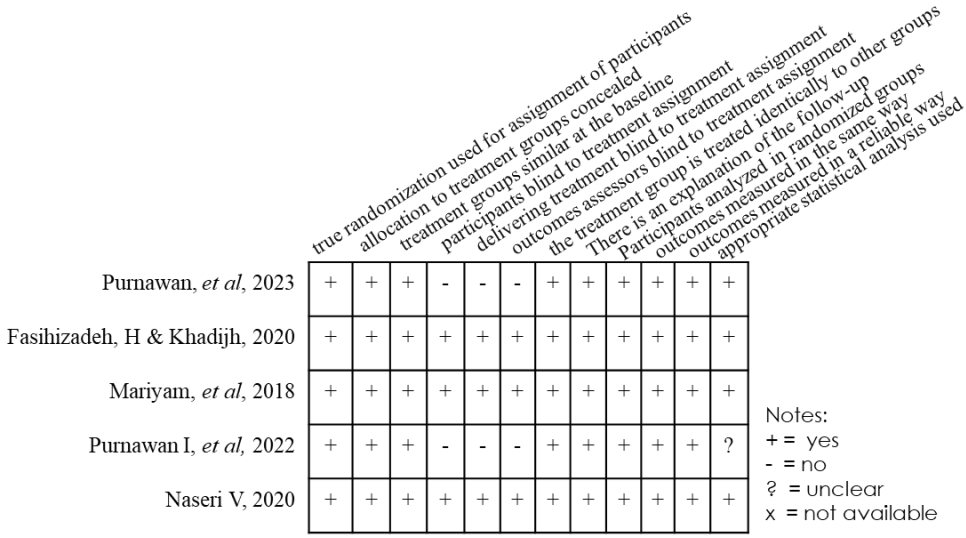

Figure 2. RCT Research Article Quality Review Results

Figure 3 presents the results of measuring the quality of quasi-experimental and pre-experimental research articles.

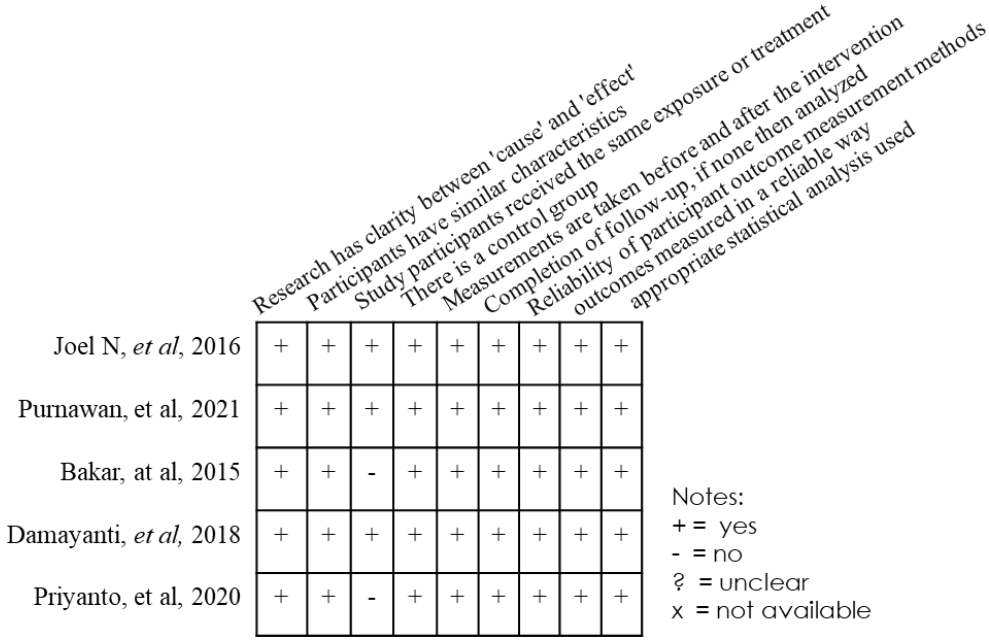

Figure 1. Quality Assessment Results of Quasi-Experimental Research Articles

Figure 3 presents the quality assessment of quasi-experimental studies. The studies by (12) (14) (15) met the essential criteria for high-quality quasi-experimental research. However, two studies (16) (17) lacked a control group, as they employed a pre-experimental design with a single-group approach. Despite this limitation, these studies fulfilled 8 out of 9 quality indicators (88.8%), maintaining their classification as methodologically robust quasi-experimental research.

Results of individual studies

Table 2 presents the key findings extracted from 11 selected studies, summarizing the study population, spiritual support model, and primary results. The studies evaluated the effects of various spiritual interventions, such as Quran recitation, prayer, and supportive presence, on psychological and physiological parameters in ICU and NICU patients.

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Table 2. Data Extraction Result

No	Respondent	Spiritual Support Model	Results
1	• ICU patients • Age > 18 years • Installed mechanical ventilator > 6 hours • Total 50 people (intervention = 25 and control = 25) • Location: Spain	chaplain-lead picture-guided spiritual care	Measurement of anxiety using Visual Analog Scale. There was a significant decrease in mean anxiety scores from 64 (±29) to 44 (±28) (p-value = 0.002). There was no effect of this therapy on physical pain.
2	• ICU patients • Age > 12 years • Total 40 people (intervention = 20 and control = 20) • Location: Indonesia	Listening to Quran recitation for 15 minutes	Stress biomarkers using salivary cortisol • There was a significant decrease (p-value = 0.007) in the median salivary cortisol level of the intervention group from 55.2 (34.2-98.9) to 41.5 (18.8 -57.27). • There was a non-significant increase in the median value of salivary cortisol levels (p-value = 0.85) in the intervention group, from 41.5 (14.5–89.3) to 49.2 (18.7–95.59) in the control group
3	• ICU patients • Age > 18 years • Total 40 people (intervention = 20 and control = 20) • Location: Indonesia	Listening to Quran recitation for 15 minutes	Pain measurement using Critical Observation Tools (CPOT). • There was no significant difference (p-value=0.24) in the median pain value between the intervention group (p-value<0.001) and the control group (p-value < 0.001).
4	• ICU patients who will be extubated • Age 20 - 75 years • Total 80 people (intervention = 40 and control = 40) Location: Iran	• Supportive attendance. Communicating and active listening. Explaining the treatment program • Supporting the religious rituals of the patient. Providing a place to pray, Quran, prayer book) • Using supportive systems. The presence of family members to provide spiritual support before the extubation process	Measurement of pain and anxiety using Visual Analog Scale (VAS). • There was a significant difference (p=0.001) in mean anxiety between the intervention group (3.60±1.29) and the control group (6.90+1.23). Pain measurement was performed 3 times, namely before, immediately after extubation, and 10 minutes after extubation. • The mean pain before extubation in the intervention group (1.72 ± 0.75) was significantly (p value = 0.001) lower than the control group (2.4 + 0.87). • The mean pain immediately after extubation in the intervention group (5.92±0.82) was significantly (p-value=0.001) lower than the control group (8.25±1.32). • The mean pain immediately after extubation in the intervention group (4.25 ± 1.12) was significantly (p-value = 0.007) lower than the control group (4.92 ± 1.07). • Repeated measure ANOVA test showed a significant decrease in mean pain (before, immediately after, and 10 minutes after) (p-value = 0.001) both in the intervention group and control group.
5	• Neonates in the NICU. • Mean age 4.8 ± 1.3 days (Intervention) and 4.9 ± 2.2 days (control) • Total 80 people (intervention =	Listening to the recitation of Surah Arahman 3 minutes before to 3 minutes after blood sampling through the heel. The recitation of Al Quran was played using an MP3 player	The parameters measured were physiological responses (oxygen saturation, pulse, and respiration rate) and pain intensity. Measurements were taken 3 minutes before action, during action, and 3 minutes after action. Pain measurement used the neonatal infant pain scale (NIPS) while other data were taken through bedside monitors. Results of repeated measure ANOVA test:

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No	Respondent	Spiritual Support Model	Results
	40 and control = 40) • Location: Iran	at a distance of 1 meter from the baby.	• There was a significant increase in heart rate during the blood collection procedure (p-value <0.001) in both the intervention and control groups (p-value = 0.008). • There was a significant increase in respiration rate during the blood collection procedure in both the intervention (p-value < 0.001) and control (p-value = 0.005) groups. • There was a significant decrease in oxygen saturation during the blood collection process in both the intervention group (p-value = 0.004) and the control group (p-value < 0.001). • The mean oxygen saturation 3 minutes after blood collection in the intervention group (92.7 + 2.6) was significantly (p-value = 0.04) higher than the control group (89.4 $\pm$ 7.1). • There was a significant increase in the mean pain score during blood collection compared to 3 minutes before and after the action (p-value <0.001) in both the control group and the intervention group. • The mean pain score 3 minutes after blood collection in the intervention group (0.8 $\pm$ 0.1) was lower than the control group (2.2 $\pm$ 0.5) significantly (p-value = 0.04).
6	• ICU patients • Age > 11 years • Total 86 (intervention 43, control 43) • Location: Indonesia	Listening to an audio recording in the form of a combination of instrumental relaxation music, dhikr, recitation of the Quran, and prayer) with a duration of 30 minutes.	The parameters measured included stress biomarkers (salivary cortisol levels) and pain (CPOT). Measurements were taken twice, 15 minutes before and 30 minutes after treatment. • The decrease in salivary cortisol levels in the intervention group (3.88 [1.64 - 38.18]) was significantly (0.042) greater than the control group (2.82 [0.23 - 8.42]). • There was a significant decrease in pain scores (p-value <0.001) in the intervention group from 2.60 ng/ml (pre) to 1.95 ng/ml (post). • There was no significant difference in pain scores (p=0.75) between pre (2.7 ng/ml) and post (2.5 ng/ml).
7	• ICU patients • Age > 11 years • Total 44 (intervention 22, control 22) Location: Malaysia	Listening to the recitation of the Quran in the form of surat alfatihan and surat yasin for 30 minutes. The volume of the sound is adjusted to the patient's facial comfort response	The physiological parameters measured include heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), mean artery pressure (MAP), respiratory rate (RR), and saturation of partial oxygen (SaO2). Measurements were taken 3 times, namely before, 5th minute of therapy, and 5 minutes after therapy. • There was no significant difference in physiological parameters (p-value > 0.05) between the intervention group and the control group.
8	• NICU preterm infants • Total 30 • Location Indonesia	Listening to the recitation of Al Quran Surah Arahman 3 times a day for 3 days. The distance between the speaker and the respondent is 30 cm with a volume of 65 - 75 dB.	Measurement of oxygen saturation using pulse oximetry placed on the infant's leg. Measurements were taken before and after the therapy session. Linear regression test showed a significant increase in oxygen saturation (p-value <0.05; 95% CI) every day: day I (2.07%), day II (3.75%), and 4.65% on day III. The increase in oxygen saturation was within the normal range.

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No	Respondent	Spiritual Support Model	Results
9	• Premature infants, who received mechanical ventilator support CPAP mode • Total 20 people • Location Indonesia	Listening to the murottal for 3 days. However, the duration of each session and the frequency per day is not explained.	Parameters measured include heart rate, respiration rate, and oxygen saturation. Measurements were taken before and after the therapy session. • HR decreased on the first and second day, but not significantly (p-value> 0.05). A significant increase in HR (p-value = 0.015) occurred on the third day from pre (129.70±7.44) to post (133.0+12.07). The decrease and increase in HR were still in the normal range. • RR experienced a non-significant decrease (p value =0.79) on day 1 from 48.4 x/min to 47.25 x/min. A significant increase (p value = 0.036) occurred on day II from 44.9x/min to 45.9 x/min. A significant decrease (p value = 0.010) again occurred on day III from 44.6 x/min to 41.7 x/min. The decrease and increase are still in the normal range • Oxygen saturation increased from day I to today III. A significant increase occurred on day III (p-value = 0.006; pre = 96.95% to 97.6%).
10	• Comatose patients in ICU • Total 66 (intervention 33, control 33) • Age 20 - 60 years • Location: Iran	Listening to the recitation of Quran Surah Arad for 17 minutes every day for 10 days using headphones.	The parameters measured were the level of consciousness using GCS (Glasgow Comma Scale). • There was an increase in GCS score in the intervention group (p=0.01). • The increase in GCS score in the control group was not significant (p=0.09).
11	• ICU patients with acute coronary syndrome. • Number of patients: 30 people. • Age: not listed Location: Indonesia	Listening to the recitation of the Quran for 20 minutes.	The parameter measured was chest pain using a numerical rating scale (NRS). • There was a significant decrease (p value <0.001) in chest pain from pre (4.23±1.2) to post (3.05±1.09).

Results of Syntheses

The data extraction process identified a total of 526 ICU patients included in this review. The majority of participants were from Indonesia (47%), followed by Iran (35%), Spain (10%), and Malaysia (8%). The study population encompassed a broad range of age groups, including neonates, children, adolescents, adults, and older adults. Four primary types of spiritual support interventions were identified across the included studies: chaplain-led picture-guided spiritual care (12), listening to a combination of dhikr, prayers, Quran recitation, and traditional relaxation music (13), listening to Quran recitation as a single intervention (10,11,14–19), and structured spiritual care programs (9). Among these approaches, listening to Quran recitation emerged as the most frequently implemented intervention. The effectiveness of spiritual support was assessed through various health indicators, including anxiety, pain, stress, level of consciousness, oxygen saturation, and vital signs.

Effects on Anxiety

Anxiety was measured using the Visual Analog Scale for Anxiety (VAS-A). Findings demonstrated that chaplain-led picture-guided spiritual care significantly reduced anxiety levels in ICU patients on mechanical ventilation (p = 0.002) (12). Similarly, listening to Quran recitation was associated with a significant reduction in anxiety levels among patients undergoing extubation (p < 0.001)(9). Despite methodological variations across studies, the overall evidence consistently indicated that spiritual support interventions contribute to anxiety reduction in critically ill patients.

Effects on Pain

Pain assessment tools varied depending on the age group of participants. For neonates and infants, pain was evaluated using the Neonatal-Infant Pain Scale (NIPS), whereas adult patients were assessed

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using the Critical Care Pain Observation Tool (CPOT)(11), the Visual Analog Scale (VAS) (12) and the Numeric Rating Scale (NRS) (17). The findings on the effect of spiritual support on pain relief were mixed. In adult ICU patients, listening to Quran recitation for 15 minutes did not result in a significant reduction in pain levels ($p = 0.24$) (15), and no significant effect was observed for chaplain-led picture-guided spiritual care (12). Conversely, significant pain reduction was reported among neonates exposed to Quran recitation, as reflected in lower post-procedural pain scores compared to control groups (11). These results suggest that while spiritual support interventions may not yield substantial pain relief in adults, they may provide benefits in neonatal pain management.

Effects on Stress

Stress levels were evaluated using cortisol levels as a biomarker (20). The findings demonstrated that listening to Quran recitation, either as a standalone intervention or in combination with relaxation music, prayers, and dhikr, was associated with significant reductions in cortisol levels among ICU patients, both those receiving and not receiving mechanical ventilation (15) (19). Sensitivity analyses confirmed the robustness of these findings, highlighting the potential role of spiritual support as a non-pharmacological strategy for stress management in ICU patients.

Effects on Level of Consciousness

The Glasgow Coma Scale (GCS) was used to assess patients' level of consciousness. Results indicated that listening to Quran recitation, specifically Surah Ar-Ra'd, for 17 minutes per day over a 10-day period significantly improved GCS scores ($p < 0.001$) (10). Although the control group also exhibited an increase in GCS scores, the results were not statistically significant ($p = 0.09$). These findings suggest that spiritual support interventions may play a role in facilitating consciousness recovery in critically ill patients.

Effects on Oxygen Saturation

Oxygen saturation was measured using pulse oximetry connected to bedside monitors. Studies showed that Quran recitation significantly improved oxygen saturation levels in neonates following blood sampling ($p = 0.04$) (11). Similarly, premature infants on mechanical ventilation who listened to Quran recitation, particularly Surah Ar-Rahman recited three times per day for three days, exhibited a significant increase in oxygen saturation levels ($p = 0.006$) (14). Heterogeneity analyses suggested that these effects were more pronounced in neonates compared to adult ICU patients.

Effects on Vital Signs

Vital signs assessed in the included studies encompassed blood pressure (BP), mean arterial pressure (MAP), respiratory rate (RR), heart rate (HR), and body temperature. Findings indicated that listening to Quran recitation for 30 minutes did not produce significant changes in these physiological parameters ($p > 0.05$) (16). Similarly, no significant reduction in HR or RR was observed in neonates on mechanical ventilation following Quran recitation (17). These findings suggest that while spiritual interventions may influence psychological well-being and certain physiological markers, their impact on vital signs remains limited.

DISCUSSION

Anxiety, pain, and stress are among the most prevalent challenges faced by ICU patients, arising from both physical and psychological factors. Physical stressors include internal physiological disruptions, such as pathological processes leading to tissue damage, as well as environmental stressors, including excessive noise, bright lighting, and invasive medical procedures. Additionally, psychological factors—such as feelings of helplessness, fear of death, and uncertainty—have been shown to exacerbate both physical and emotional distress in ICU patients (2)(21) (22) (23) (24).

The disruption of physiological homeostasis in critically ill patients often leads to alterations in oxygen saturation, consciousness levels, and vital signs (25) (26). Environmental factors, particularly excessive noise and bright lighting in ICU settings, have been associated with fluctuations in these physiological parameters (27) (28) (24). Moreover, psychological distress—including anxiety and fear—can further exacerbate these physiological responses, potentially worsening patient outcomes (2). Given the multifaceted nature of these stressors, a comprehensive approach to ICU care should integrate

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interventions that address both physical and psychological well-being.

Spiritual support has been increasingly recognized as a crucial component in the holistic management of ICU patients. Several studies have highlighted its role in alleviating psychological distress and improving overall well-being (5) (29). Among the various spiritual interventions examined in this review, Quran recitation was the most frequently implemented, primarily due to the predominance of studies conducted in Muslim-majority countries such as Indonesia, Iran, and Malaysia. Quranic recitation is widely regarded as an accessible, cost-effective, and culturally relevant intervention, particularly for Muslim patients experiencing critical conditions (29) (6).

The findings of this review suggest that Quran recitation is effective in reducing anxiety and stress among ICU patients. This effectiveness may be attributed to the deeply held belief in the healing properties of the Quran among Muslim patients, who often perceive its recitation as a form of spiritual therapy. Consequently, its integration into ICU care has been associated with improved emotional well-being and reduced psychological distress (6) (5) (30). However, this may be more effective for Muslim patients, and further research is needed to explore spiritual care for non-Muslim ICU patients.

Beyond Quran recitation, other spiritual practices—including prayer and *dhikr*—have also demonstrated positive effects on the psychological state of ICU patients. Evidence suggests that engaging in religious activities fosters emotional stability, provides a sense of security, and enhances patients' ability to cope with hospitalization-related distress (5) (6) (13). Additionally, structured spiritual care programs, such as chaplain-led picture-guided spiritual care, offer a more inclusive approach that caters to patients across different religious backgrounds. This intervention allows chaplains to assess patients' spiritual needs and provide personalized support, ultimately reducing anxiety and stress, particularly in patients requiring mechanical ventilation (12). The growing body of evidence supporting these interventions highlights their potential as adjunctive strategies to improve ICU patient outcomes. Further, while spiritual care is effective in adults, its role in neonatal and pediatric ICUs is underexplored. Age-appropriate interventions should be considered for these populations to better address their unique spiritual needs.

Clinical Implications

The findings of this review have significant implications for ICU nursing practice. Spiritual support interventions have demonstrated substantial benefits in alleviating psychological distress, improving emotional well-being, and enhancing overall patient satisfaction. Given these positive outcomes, the integration of spiritual care into ICU protocols should be prioritized. To ensure effective implementation, ICU nurses should receive specialized training in recognizing and administering spiritual interventions tailored to patients' needs. Additionally, a multidisciplinary approach—incorporating spiritual counselors, chaplains, and mental health professionals—should be adopted to enhance the holistic nature of ICU care. Embedding structured spiritual care into routine ICU practice may contribute to improved patient experiences and overall clinical outcomes in critically ill populations.

Limitations

Several limitations should be considered when interpreting the findings of this review. First, the heterogeneity in study methodologies and the variability in the quality of included studies may affect the reliability and generalizability of the results. Additionally, potential publication bias must be acknowledged, as studies reporting positive effects are more likely to be published than those with negative or inconclusive findings. Another key limitation is the absence of standardized tools for assessing spiritual care outcomes, which complicates cross-study comparisons and limits the ability to draw definitive conclusions regarding efficacy. Future research should focus on employing rigorous methodological designs, standardizing outcome measures, and ensuring balanced study inclusion to enhance the robustness of evidence in this field.

CONCLUSION

This systematic review highlights the effectiveness of spiritual support interventions in improving psychological well-being among ICU patients. The findings indicate that Quran recitation, prayer, dhikr, and structured spiritual care programs contribute to reducing anxiety and stress while enhancing consciousness levels and oxygen saturation, particularly in neonates and critically ill patients. However, the

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effects on pain relief and vital signs remain inconclusive. Given the potential benefits of spiritual support as an adjunctive intervention in ICU settings, integrating structured spiritual care into clinical practice should be considered. Further research with standardized methodologies is needed to establish robust evidence and optimize the implementation of spiritual interventions in critical care settings.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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