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The Effect of Nurse-led Religious and Spiritual Intervention on Psychological Distress among Hospice Care Patients: A Systematic Review and Meta-analysis

Young-Ran Yeun*

*Professor, Dept. of Nursing, Kangwon National University, Samcheok, Korea

[Abstract]

The aim was to evaluate the impact of nurse-led religious and spiritual interventions (RSI) on the psychological distress of hospice care patients. Pubmed, CINAHL, Cochrane Library, Embase, RISS, KISS, and ScienceOn were searched until December 2023. A systematic review and meta-analysis were performed on 10 studies involving a total of 597 hospice care patients. Overall, nurse-led RSI appeared to have beneficial effects in reducing anxiety (SMD = -1.09, 95% CI = -1.67 to -0.50) and depression (SMD = -1.12, 95% CI = -1.83 to -0.40). These findings suggest that, if applied appropriately, nurse-led RSI can be used as a method to alleviate psychological distress among hospice care patients.

▸ **Key words**: Nurse, Spiritual intervention, Anxiety, Depression, Hospice, Meta-analysis

[요 약]

이 연구의 목적은 간호사 주도의 종교적 및 영적 개입이 완화 돌봄 환자들의 심리적 고통에 미치는 영향을 평가하는 것이다. 2023년 12월까지 Pubmed, CINAHL, Cochrane Library, Embase, RISS, KISS, ScienceOn를 검색하였다. 총 597명의 완화돌봄 환자들을 대상으로 한 10편의 연구에 대해 체계적 문헌고찰과 메타분석이 실시되었다. 전반적으로 간호사 주도의 종교적 및 영적 개입은 불안(SMD = -1.09, 95% CI = -1.67, -0.50)과 우울(SMD = -1.12, 95% CI = -1.83, -0.40)을 감소시키는데 유익한 영향을 미치는 것으로 나타났다. 이러한 결과는 간호사 주도의 종교적 및 영적 개입이 적절히 적용될 경우 완화돌봄 환자의 심리적 고통을 줄이는 방법으로 사용될 수 있음을 보여준다.

▸ **주제어**: 간호사, 영적 중재, 불안, 우울, 호스피스, 메타분석

• First Author: Young-Ran Yeun, Corresponding Author: Young-Ran Yeun
*Young-Ran Yeun (yeunyr@kangwon.ac.kr), Dept. of Nursing, Kangwon National University
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I. Introduction

In the United States alone, more than 1.71 million patients utilize hospice care services annually[1]. Hospice palliative care recipients naturally experience anxiety and depression due to facing death from illness. According to previous studies, 43% to 46.3% of terminally ill patients suffer from moderate to severe anxiety and depression[2], with the intensity of psychological symptoms remaining high until death[3]. Psychological distress, including anxiety, depression, decreased morale, and phobias, affects the self-esteem and quality of life of terminally ill patients[4], and also has negative impacts on families and healthcare providers[5]. Therefore, effectively managing psychological symptoms in terminally ill patients is essential for high-quality end-of-life care.

Religious and spiritual intervention(RSI) involves providing spiritual support that meets the spiritual needs of the recipients, such as their life's meaning and purpose, love and relationships, forgiveness, and hope[6]. Over the past several decades, scientific research across disciplines such as psychology and sociology has established a correlation between mental health and religiosity/spirituality(R/S). Bonelli et al.[7], after reviewing 444 studies conducted over 50 years, reported that in over 60% of these studies, depression severity decreased and depression alleviated more quickly in response to RSI. Coelho-Júnior et al.[8], after meta-analyzing 102 studies involving adults aged 60 and above, observed that while R/S was negatively associated with anxiety and depressive symptoms, it showed positive associations with life satisfaction, sense of meaning, social relationships, and psychological well-being.

A multidisciplinary hospice team can provide RSI from a comprehensive perspective through the collaboration of various professionals. However, nurse-led RSI can have unique advantages of their own. Nurses can build deep trust with patients through daily nursing activities[9]. This relationship can create a more open environment where patients feel comfortable expressing their spiritual needs more honestly and accepting the interventions provided. Furthermore, nurses are among the most accessible healthcare professionals in hospitals or treatment facilities[10]. This accessibility can help patients receive immediate spiritual support when needed. Additionally, through everyday nursing tasks such as bathing, dressing, and feeding, nurses have opportunities to explore and address patients' spiritual needs[11]. These strengths allow nurse-led RSI to respond more closely to the individual needs of patients, providing more personalized care. Moreover, if the effectiveness of nurse-led RSI is demonstrated and appropriate standardized guidelines are established, these spiritual intervention services could be extended from hospitals to homes. Currently, hospice and palliative care in South Korea is institutionalized around inpatient hospice care. However, a delivery system should be established to appropriately utilize both home-based and inpatient services, depending on the course of the disease and the family situation[12].

However, in actual nursing practice, the implementation and research on RSI are very limited. This is due to several factors, including the difficulty for nurses to apply RSI in busy clinical settings with a shortage of nurses per patient, as well as additional factors such as moral distress, burnout, compassion fatigue, and anxiety about death[13]. Additionally, despite nurses having a positive attitude toward providing spiritual care, there is a lack of standardized guidelines to directly guide RSI[14].

Therefore, considering the current nursing workforce shortage and the limitations in clinical reality, establishing practical guidelines at an appropriate level of standardization is of utmost importance. This study aims to systematically review and meta-analyze the effect size of RSI

conducted by nurses on terminally ill patients receiving hospice care. The purpose is to provide practical information for the standardization of spiritual nursing and suggest future research directions.

II. Preliminaries

RSIs are approaches that integrate beliefs, rituals, or principles derived from religious or spiritual traditions to address various aspects of an individual's physical, emotional, and psychological health[15]. These interventions often aim to promote healing, provide comfort, and help individuals navigate life's challenges through faith or spiritual perspectives[16]. Various approaches such as spiritual care programs, short-term life review, dignity therapy, and emotional support and counseling are employed to manage psychological distress in hospice palliative care patients.

Spiritual care programs focus on meeting patients' spiritual needs and enhancing inner peace through religious and spiritual practices[17]. These programs typically include elements such as individual spiritual assessment and support, spiritual guidance and resources, and spiritual activities and rituals[18]. They are often tailored to fit the patient's beliefs and values, respecting diverse religious backgrounds and ensuring a comfortable environment for patient participation[19]. While often having a religious nature, spiritual care programs can also be utilized independently of religious affiliations, benefiting a wide range of patients[20].

Short-term life review is an approach aimed at promoting psychological recovery by encouraging patients to reflect on their lives, revisit past experiences, and illuminate the meaning of life[21]. It is commonly provided as a psychological support method, particularly in end-of-life or terminal stages[22]. Short-term life review primarily focuses on emotional and psychological healing rather than religious aspects, and it can be adapted in various forms depending on the patient's physical and emotional needs[23].

Dignity therapy is a therapeutic approach centered around exploring and documenting the meaning and value of one's life for terminally ill patients[24]. Developed to help patients acknowledge and restore their dignity when facing death, it is typically conducted by mental health professionals, social workers, or religious leaders[25]. Dignity therapy emphasizes supporting patients' psychological and emotional recovery and often has a positive impact on their families and social supporters[26]. It is recognized as an important tool for respecting patients' personal dignity and helping them confidently navigate the final stages of life[27].

Emotional support and counseling involves providing professional support and assistance to patients during emotionally challenging times[28]. Often provided alongside medical treatments or healthcare management, its goal is to enhance overall well-being and alleviate psychological distress[29]. This role is typically fulfilled by mental health professionals, counselors, psychologists, or nurses[30]. Emotional support and counseling help terminally ill patients contemplate and cope with death and the final stages of life, reducing significant burdens and fostering emotional stability for patients and their families[31].

III. Methods

1. Eligibility criteria

The selection of studies was conducted according to the guidelines for systematic literature review and meta-analysis outlined in the Reporting for Systematic Reviews and Meta-Analysis(PRISMA). The PICO-SD criteria for study selection are as follows: Participants (P) are adult patients aged 18 and older who are receiving hospice care services at the end stage of life-threatening illnesses,

including cancer. While both palliative care and hospice care aim to improve the quality of life for patients suffering from terminal or severe illnesses, they encompass slightly different concepts. Palliative care focuses on alleviating symptoms and improving the quality of life alongside curative treatment, regardless of the stage of the disease. In contrast, hospice care is specifically applied to patients at the end of life, prioritizing the maintenance of quality of life for both the patient and their family rather than focusing on curative treatment[32]. The participants in this study are patients receiving hospice care services at the end stage of their illness. The Intervention(I) was non-pharmacological RSI. RSI refers to interventions that include at least some mention of spiritual beliefs or experiences transcending the material world or daily life[33]. The Comparison(C) group consisted of those not receiving the intervention or receiving different comparator interventions. Outcomes(O) for psychological stress included anxiety and depression. Considering the limited availability of experimental studies from preliminary searches, Study Design(SD) included not only Randomized Controlled Trials(RCTs) but also non-randomized controlled trials(non-RCTs) and single-group pre/posttest studies. Studies published in English and Korean were included. Qualitative studies, descriptive surveys, meta-analyses, and longitudinal studies were excluded. Additionally, studies published only as abstracts, inaccessible studies, and those lacking sufficient information for calculating effect sizes were excluded.

2. Literature search and data extraction

The data search was conducted from January to February 2024, targeting papers published up to December 2023 without date restrictions. The search engines used were Pubmed, CINAHL, Cochrane Library, Embase, Research Information Service System(RISS), Korean Information Service System(KISS), and ScienceOn. To enhance sensitivity and specificity, mesh and Emtree terms were applied based on pre-search verification. For non-Mesh and non-Emtree keywords, searches were centered on titles, abstracts, or keywords.

The keywords used for the search were “(hospice OR palliative OR terminal OR terminally ill* OR seriously ill* OR life-threatening OR life-limiting OR end of life) AND (spiritual* OR religio* OR buddhis* OR islam* OR hindu* OR taois* OR Judaism OR faith OR pray OR prayer OR existential OR transcend) AND (anxiety OR depressi* OR psychological) AND (nurs*)”.

Data extraction and coding were conducted to ensure accuracy in data entry. Preliminary review of selected studies determined data extraction items, and extraction forms were developed and used. Data extraction items included author, year, study design, participants, age, gender, sample size, type of intervention, format, provider, duration, frequency, session, outcomes, and measures.

3. Data analysis

Statistical analyses for effect sizes and homogeneity of intervention programs were conducted using the RevMan 5.3 software from the Cochrane Library. Effect sizes were calculated using Standard Mean Difference(SMD), which standardized outcome measures across studies. Higgins' I^2 test was used to assess statistical homogeneity of effect sizes, categorizing I^2 results as low($\leq$25%), moderate(50%), or high($\geq$75%) heterogeneity[35]. Effect sizes with confirmed homogeneity were synthesized using a fixed-effect model, while those with heterogeneity were synthesized using a random-effects model. Statistical significance of effect sizes was determined by overall effect testing and 95% confidence intervals(CI), with a significance level set at <5%. Effect sizes were interpreted according to Cohen's criteria[36]: SMD = 0.20 to 0.49 as small, SMD = 0.50 to 0.79 as medium, and ES $\geq$ 0.80 as large effects. Subgroup analyses examined differences in key variables influencing integrated outcome, participants, program type, frequency,

session, and total duration. Publication bias among retrieved studies was assessed using funnel plots.

4. Risk of bias assessment

Since only one RCT study was included in the analysis, the Risk of Bias Assessment Tool for Non-randomized Studies 2.0(RoBANS 2.0) was used to evaluate bias risk. This assessment tool is recommended as a checklist-based quality assessment scale, providing a systematic and reproducible method to assess study quality[37]. RoBANS 2.0 evaluates study quality across eight domains: comparability of participants, selection of participants, confounding variables, measurement of exposure, blinding of outcome assessments, outcome evaluation, incomplete outcome data, and selective outcome reporting.

IV. Results

1. Literature selection

The results of the literature selection are shown in Figure 1. A total of 985 articles were identified from the databases. After excluding 664 duplicates, 321 articles were screened based on titles and abstracts, resulting in 114 articles for full-text review. Following selection criteria, 10 studies were finally chosen for meta-analysis.

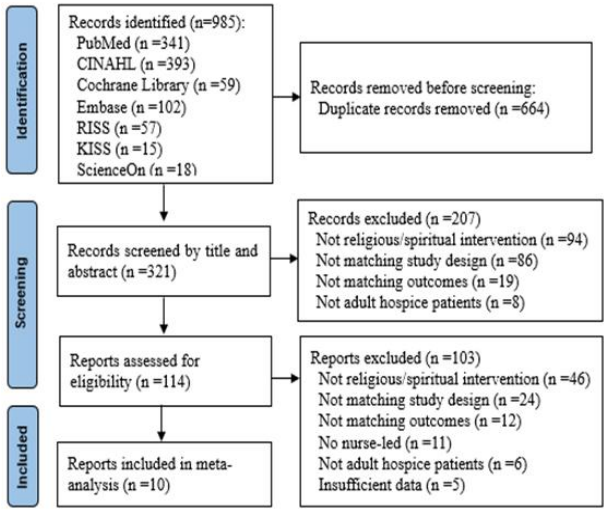


Fig. 1. Flow Diagram of Study Selection

2. Characteristics of the included studies

Characteristics of the 10 studies included in the meta-analysis are presented in Table 1. Characteristics of the 10 studies included in the meta-analysis are presented in Table 1. The study designs consisted of 1 RCT(10.0%), 8 non-RCT(80.0%), and 1 single-group pre/posttest study(10.0%). All studies were published after 2000, with a total of 597 participants. Seven studies(70.0%) targeted terminal cancer patients, while three studies(30.0%) focused on hospice care patients. The mean age of participants was 62.2 ± 5.3 years, with an average female proportion of 50.3 ± 12.7%. The most common type of intervention was spiritual care program, implemented in 7 studies(70.0%). Except for one study with unclear session duration, interventions typically ranged from 20 to 60 minutes per session. Weekly frequency was most frequently reported as once a week in 5 studies(50.0%), and the number of sessions varied from 2 to 12. Total duration was predominantly 2 weeks or 3 weeks, each reported in 4 studies(40.0%).

3. Effects of nurse-led RSI

Figure 2 shows the estimated effect sizes of the interventions, and Table 2 presents the results of the subgroup analysis, which identifies differences between key variables that influence the pooled results. Publication bias is shown in Figure 3.

Seven studies were included in the analysis of RSI for anxiety relief. The effect size was -1.09(95% CI = -1.67 to -0.50, $p < 0.001$), with high heterogeneity indicated by I2 = 87%. Results of the participant subgroup analysis showed a statistically significant large effect size among terminal cancer patients(SMD = -1.22, 95% CI = -2.07, -0.36). When analyzing by program type, anxiety significantly decreased with spiritual care program(SMD = -1.35, 95% CI = -2.21, -0.49) and short-term life review(SMD = -0.46, 95% CI = -0.89, -0.03). The estimated effects by frequency per week were significant for once weekly(SMD = -0.81, 95% CI =

-1.37, -0.25), 2-3 times weekly(SMD = -2.30, 95% CI = -5.13, -0.53), and 5-10 times weekly(SMD = -0.39, 95% CI = -0.71, -0.06), all showing reductions in anxiety. Session-specific analyses revealed statistical significance in reducing anxiety for 2-3 sessions(SMD = -0.28, 95% CI = -0.78, -0.17), 7-9 sessions(SMD = -1.20, 95% CI = -1.76, -0.65), and 12 sessions(SMD = -3.77, 95% CI = -4.83, -2.72). Across different total durations, 2 weeks(SMD = -0.43, 95% CI = -0.66, -0.21), 3 weeks(SMD = -1.20, 95% CI = -1.76, -0.65), and 4 weeks(SMD = -3.77, 95% CI = -4.83, -2.72) all showed effectiveness in managing anxiety. A slight publication bias was indicated by the funnel plot.

Here are the results regarding the effects of RSI on depression. The analysis included estimates from 8 studies, with an effect size of -1.12 (95% CI = -1.83 to -0.40, p = 0.002), and I2 = 92%. Subgroup analysis showed statistically significant effects only among terminal cancer patients (SMD = -1.52, 95% CI = -2.37, -0.67). Depression significantly decreased with Spiritual care program (SMD = -1.26, 95% CI = -2.34, -0.17) and Dignity therapy (SMD = -6.62, 95% CI = -8.55, -4.68). Estimated effects by frequency per week showed reductions in depression for once weekly (SMD = -1.29, 95% CI = -2.37, -0.21) and 2-3 times weekly (SMD = -1.37, 95% CI = -2.32, -0.42). Session-specific analysis indicated statistical significance in reducing depression for 2-3 sessions (SMD = -0.66, 95% CI = -1.29, -0.04), 7-9 sessions (SMD = -3.34, 95% CI = -5.71, -0.97), and 12 sessions (SMD = -1.84, 95% CI = -2.45, -1.24). Effective management of depression was observed only with 1 week (SMD = -1.54, 95% CI = -2.37, -0.71) and 3 weeks (SMD = -1.93, 95% CI = -3.14, -0.72) of total duration (Table 2). A slight publication bias was indicated by the funnel plot.

4. Risk of bias assessment

The results of the risk of bias assessment are shown in Figure 4. Seven studies(70.0%) were evaluated as unclear for blinding of the outcome assessments due to lack of mention of assessors, while one study(10.0%) was assessed as high risk due to direct assessment by researchers. For incomplete outcome data, four studies(40.0%) did not mention dropouts, thus assessed as unclear. In the confounding variables domain, two studies(20.0%) did not account for confounding variables. One study each(10.0%) in the domains of comparison possibility of participants and selection of participants did not have a control group or did not assess homogeneity between the two groups, resulting in a high risk of bias. Other domains showed low risk of bias.

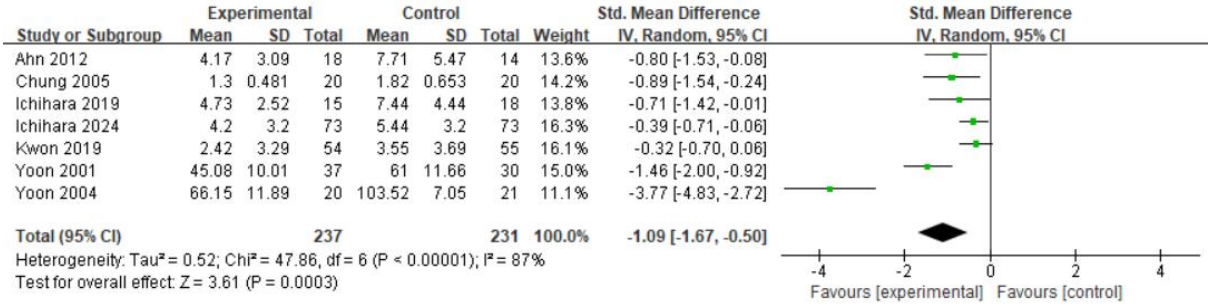
V. Discussion

Effectively managing psychological symptoms in terminally ill patients exhibiting high levels of anxiety and depression is essential for quality end-of-life care. Therefore, this study was conducted to investigate clinical trial evidence on the effectiveness of Nurse-led RSI for psychological distress in hospice care patients, aiming to provide practical implications and future research directions.

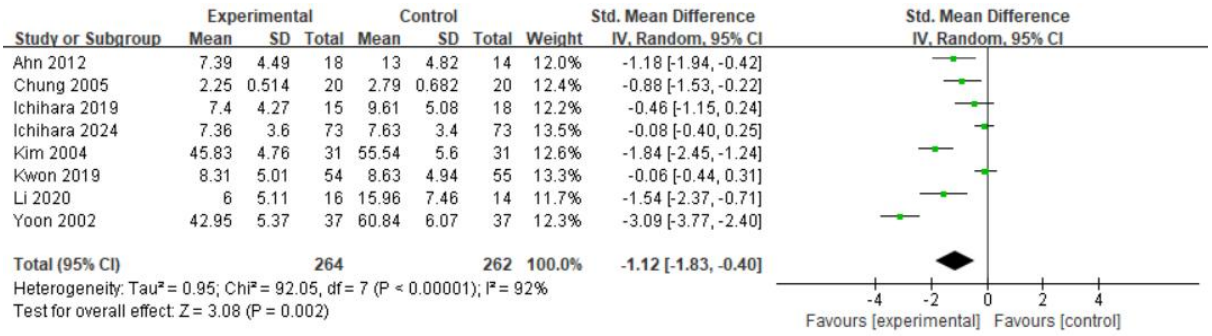
This study findings indicate that Nurse-led RSI significantly reduce psychological distress, including anxiety (SMD = -1.02) and depression (SMD = -1.12), among hospice care patients. In contrast, previous meta-analyses examining the effects of RSI applied to hospice care patients have shown varying results. Wulandari and Rochmawati [27] reported that dignity therapy applied to hospice care patients had no statistically significant effects on either anxiety or depression. Salamanca-Balen et al. [47] found that hope-fostering interventions had no effect on anxiety but a small effect (SMD =-0.29) on depression. Conversely, Chen et al. [48], after analyzing 9 RCTs, indicated that life review interventions applied to patients with

Table 1. Characteristics of Included Studies

First author and year	Study design	Participants				Interventions			Control group	Outcomes	Measures
		Status	Mean age	Female (%)	No. (eN, cN)	Type	Min, frequency, session, total duration	Follow-up			
Ahn 2012 [37]	NRCT	Terminal cancer	58.6	40.6	32 (18, 14)	Short-term life review	60, 1/wk, 2, 2wk	-	Usual care	Anxiety, depression	HADS
Chung 2005 [38]	NRCT	Terminal cancer	18-70	85	40 (20, 20)	Spiritual care program	30-40, 2-3/wk, 8, 3wk	-	Usual care	Anxiety, depression	SCL-90-R
Ichihara 2019 [39]	NRCT	Terminal cancer	65.6	45.6	33 (15, 18)	Spiritual care program	30, 1/wk, 2, 2wk	1wk	Usual care	Anxiety, depression	HADS
Ichihara 2024 [40]	NRCT	Terminal cancer	72.4	47.2	146 (73, 73)	Spiritual care program	Unclear, 7/wk, 14, 2wk	-	Usual care	Anxiety, depression	HADS
Kim 2004 [41]	NRCT	Terminal cancer	55.9	45.1	62 (31, 31)	Spiritual care program	60, 4/wk, 12, 3wk	-	Usual care	Depression	SRDS
Kwon 2019 [42]	RCT	Hospice care	64.4	43.1	109 (54, 55)	Short-term life review	45, 1/wk, 2, 2wk	-	Usual care	Anxiety, depression	HADS
Li 2020 [43]	NRCT	Terminal cancer	65.9	47.4	30 (16, 14)	Dignity Therapy	30-60, unclear, 7, 1wk	2 wk	Usual care	Depression	PHQ-9
Yoon 2001 [44]	NRCT	Hospice care	59.5	46.3	67 (37, 30)	Spiritual care program	30, 1/wk, 9, 3wk	-	Usual care	Anxiety	STAI
Yoon 2002 [45]	Single group	Hospice care	59.6	48.6	37	Spiritual care program	30, 1/wk, 9, 3wk	-	-	Depression	SRDS
Yoon 2004 [46]	NRCT	Terminal cancer	57.6	53.7	41(20, 21)	Spiritual care program	20-60, 3/wk, 12, 4wk	-	Usual care	Anxiety	DAS



A. Anxiety

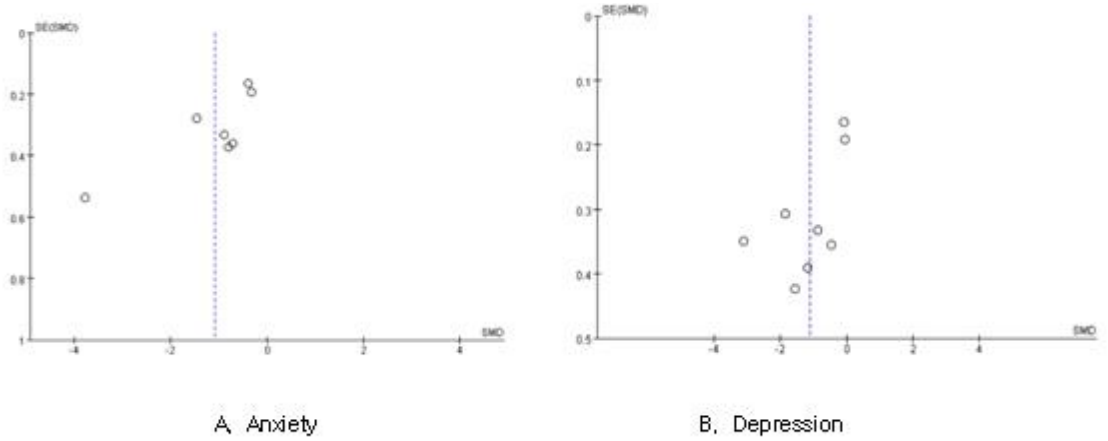


B. Depression

Fig. 2. Forest Plot of the Effects of Religious and Spiritual Intervention

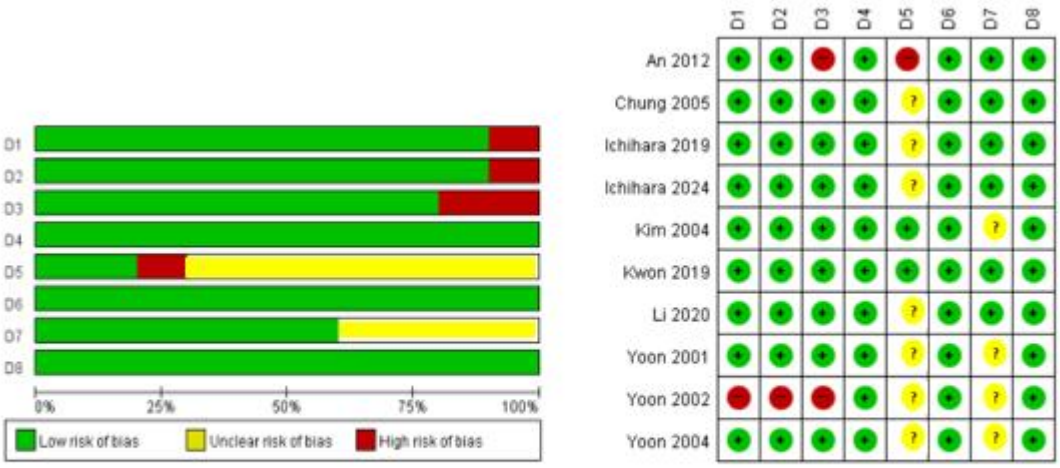
Table 2. Subgroup Meta-analysis of Anxiety and Depression

Categories		Anxiety				Depression			
		ES	95% CI	N	I2 (%)	ES	95% CI	N	I2 (%)
Status	Terminal cancer	-1.22	-2.07, -0.36	5	89	-1.52	-2.37, -0.67	7	92
	Hospice care	-0.87	-1.99, 0.24	2	91	-1.56	-4.53, 1.40	2	98
Type	Spiritual care program	-1.35	-2.21, -0.49	5	91	-1.26	-2.34, -0.17	5	95
	Short-term life review	-0.46	-0.89, -0.03	2	87	-0.97	-2.09, 0.15	3	92
	Dignity therapy	-	-	-	-	-6.62	-8.55, -4.68	1	-
Frequency	1/week	-0.81	-1.37, -0.25	4	74	-1.29	-2.37, -0.21	5	94
	2-3/week	-2.30	-5.13, -0.53	2	95	-1.37	-2.32, -0.42	2	78
	5-10/week	-0.39	-0.71, -0.06	1	-	-0.08	-0.40, 0.25	1	-
Session	2-3	-0.48	-0.78, -0.17	3	0	-0.66	-1.29, -0.04	5	88
	7-9	-1.20	-1.76, -0.65	2	42	-3.34	-5.71, -0.97	3	95
	12	-3.77	-4.83, -2.72	1	-	-1.84	-2.45, -1.24	1	-
Total duration	1 week	-	-	-	-	-1.54	-2.37, -0.71	1	-
	2 weeks	-0.43	-0.66, -0.21	4	0	-0.33	-0.73, 0.07	4	62
	3 weeks	-1.20	-1.76, -0.65	2	42	-1.93	-3.14, -0.72	3	91
	4 weeks	-3.77	-4.83, -2.72	1	-	-	-	-	-



A. Anxiety B. Depression

Fig. 3. Funnel Plot of the Effects of Religious and Spiritual Intervention



D1=Comparison possibility of participants; D2=Selection of participants; D3=Confounding variables; D4=Measurement of exposure; D5= Blinding of the outcome assessments; D6=Outcome evaluation; D7=Incomplete outcome data; D8=Selective outcome reporting

Fig. 4. Risk of Bias Assessment

life-threatening illnesses showed positive effects only on depression. Kang et al. [49], who reviewed 9 RCTs and 4 non-RCTs targeting patients with Advanced or Terminal Cancer, reported that meaning-centered interventions had a small effect size of approximately -0.28 only on anxiety.

However, our study reveals that Nurse-led RSI demonstrates a significant effect size in reducing both anxiety and depression among hospice care patients. Nurse-led RSI appears to have achieved higher effectiveness due to the significant role of nurses in establishing strong trust relationships with patients and their families. Nurses, who have ongoing contact with patients through daily nursing activities, can perceive spiritual needs and respond accordingly [50]. This allows for more personalized and continuous support compared to other healthcare professionals. Moreover, nurses can share their awareness of the patient's spiritual state with other medical staff, collaborate, and contribute to comprehensive treatment planning [51]. Furthermore, patients feel more comfortable sharing their needs and accepting interventions when conducted by nurses with whom they have established relationships [52].

Meanwhile, this study, similar to life review interventions [53] or hope-fostering interventions [47] conducted with hospice palliative care patients, could not substantiate the long-term effects of Nurse-led RSI on psychological distress, as only two studies [39, 43] reported follow-up outcomes due to the deteriorating physical and mental conditions of terminally ill patients. This requires confirmation in future analyses as more research accumulates.

Subgroup analyses were conducted to assess the effects of interventions across different population groups. Study participants were categorized into terminal cancer patients and hospice care recipients, including cancer patients. The analysis revealed statistically significant reductions in both anxiety and depression only among terminal cancer patients. However, caution is warranted in interpreting the results when effect estimates are based on fewer than three studies [49], suggesting a need for further research to confirm these findings in the future.

Nurses provided RSI to participants through various strategies such as Spiritual care program, Short-term life review, and Dignity Therapy. Among these, Spiritual care program was the most frequently implemented, showing the largest effect sizes for both anxiety and depression. Among the studies included in the analysis, Ichihara et al. [39, 40] implemented a Spiritual Pain Assessment Sheet (SpiPas)-based spiritual care program to assess spiritual distress in patients with progressive cancer. This program integrates current spiritual assessments with specific dimensions of spiritual distress evaluation. Kim and Song [41], Yoon [44-46], and Chung [38] assessed spiritual needs based on nursing processes, providing nursing interventions rooted in Christian faith, using scriptures, prayers, hymns, and music to help establish or maintain a personal and meaningful relationship with God. Various strategies share the core components of RSI, but they differ in focus and intensity. Moreover, there were significant differences across interventions in terms of frequency, session numbers, and total duration. Subgroup analysis revealed that conducting interventions 2-3 times per week showed the largest effect sizes, while sessions held 7-9 times and a total duration of 3 weeks appeared most effective.

Terminally ill patients often experience physical discomfort and pain, which can make it challenging to focus on spiritual interventions[54]. Additionally, their decision-making capacity may be limited, and they can be emotionally fragile[55]. Furthermore, depending on the patient's condition, there may not be sufficient time and resources to operate programs [56]. Therefore, efforts are needed to find the most suitable and efficient approach for patients based on research findings. Establishing practical guidelines at an appropriate

standardization level in this field is crucial to minimize nursing challenges in busy clinical settings while maximizing effectiveness, considering patients' life expectancy and physical burdens. Based on the results of this study, practical guidelines at an appropriate level can be established to maximize effectiveness while considering patients' life expectancy and physical burden, and minimizing the difficulties faced by nurses in busy clinical settings.

Meanwhile, hospice and palliative care in South Korea is institutionalized mainly around inpatient hospice care. However, a delivery system should be established to appropriately utilize both home-based and inpatient services depending on the disease progression and family situation. In countries such as the United States and Singapore, in-home hospice has become a central component of the hospice and palliative care delivery system[57]. The home hospice team, composed of a multidisciplinary team including doctors, nurses, and social workers, provides services by visiting the patient's home. Among them, the specialized nurse is the one who visits most frequently and takes care of the patient. Nurses play a crucial role in communicating with patients and caregivers, sensitively assessing changes in patients' symptoms and conditions, and making emergency visits at night or on weekends if the terminally ill patient's condition changes rapidly or is unstable[58]. If appropriate standardized guidelines for nurse-led RSI are established, these spiritual intervention services could be extended from hospitals to homes. Patients at the end of life could receive more personalized and effective RSI in the familiar environment of their homes, providing them with better care and support. To further develop this, additional research targeting home hospice patients and their caregivers is necessary.

A systematic review revealed that the number of studies on Nurse-led RSI for hospice palliative care patients has stagnated. When classified by publication years in five-year increments, there were only 4 studies conducted between 2000 and 2004, compared to just 2 studies each during 2015-2019 and 2020-2024. This contrasts sharply with previous research indicating an increasing number of spiritual nursing studies targeting a broad spectrum of individuals including psychiatric patients, chronic disease sufferers, pregnant women, and even retired veterans [59]. These findings suggest that while nursing's spiritual responsibilities are increasingly recognized as essential components of care, studies focusing on hospice patients remain limited.

The present study has several limitations. Firstly, there were very few RCTs included in the analysis, and notably, high risk of bias was observed, especially in the area of blinding of outcome assessments. Hospice research faces various challenges such as poor physical condition of participants, high dropout rates, deterioration of participant condition, and fatigue-related data loss. Despite these challenges, rigorous study designs are needed to firmly establish the available evidence regarding the effectiveness of Nurse-led RSI.

Secondly, the integrated meta-analysis revealed high levels of heterogeneity. Although subgroup analyses were conducted to assess this, significant heterogeneity persisted in some subgroups. Therefore, caution is required when interpreting the results of the meta-analysis.

Thirdly, despite applying comprehensive methods to search the literature, publication bias was identified. Adjusting for publication bias in estimating changes in integrated effect sizes will be necessary in future research.

Despite several limitations, this study is significant as it is the first to verify the effectiveness of nurse-led RSI for hospice care patients. It raises awareness of nurse-led RSI, provides practical information for the standardization of spiritual care, and guides future research directions. It is believed that having a trusted nurse who already has an established

relationship with the patient provide spiritual care interventions to manage psychological distress may be more comfortable and effective compared to other healthcare professionals. Therefore, it is necessary to develop a short-term spiritual care intervention program and integrate it into specialized nursing education, guiding more nurses to provide RSI in their daily work.

VI. Conclusion

The present study systematically reviewed and meta-analyzed 10 Nurse-led RSI studies published until December 2023 to assess the effect sizes of Nurse-led RSI on psychological distress, specifically anxiety and depression.

The results categorized Nurse-led RSI into spiritual care program, short-term life review, and dignity therapy, with spiritual care program showing the most significant effects. Meta-analysis revealed substantial effect sizes for Nurse-led RSI on anxiety (SMD = -1.09, 95% CI = -1.67 to -0.50) and depression (SMD = -1.12, 95% CI = -1.83 to -0.40), providing evidence for alleviating psychological distress. Subgroup analyses indicated that interventions conducted at a frequency of 2-3 times per week, over 7-9 sessions, with a total duration of 3 weeks, demonstrated the largest effect sizes.

Most studies lacked RCT designs, exhibited high heterogeneity, and had a limited number of publications, suggesting a need for additional validation as more RCT-based research accumulates in the future. In addition, it is necessary to develop a short-term spiritual intervention program based on the results of this study and integrate it into specialized education to enable more hospice palliative care nurses to provide RSI in their daily work.

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Authors

Young-Ran Yeun received the B.S. degree in Nursing from Sahmyook University in 1993, the M.S. degree in public health form AIIAS in 2008, and the Ph.D. degree in Nursing from the Catholic University, Korea, in 2012.

Dr. Yeun joined the faculty of the Department of Nursing at Kangwon National University, Samcheok, Korea, in 2014. She is currently a Professor in the Department of Nursing, Kangwon National University. She is interested in health promotion, psychiatric mental health, and research methods.