



# Strengthening psychological well-being of Indonesian females with breast cancer through the religious-based caring program: A quasi-experimental study among Muslim population

Maria Komariah<sup>1</sup>, Hana Rizmadewi Agustina<sup>1</sup>, Laili Rahayuwati<sup>2</sup>, Kurniawan Kurniawan<sup>3</sup>,  
Nina Gartika<sup>4</sup>, Arpit Mago<sup>5</sup>, Shurouq Ghalib Qadous<sup>6</sup>, and Sidik Maulana<sup>7</sup>

<sup>1</sup> Department of Fundamental Nursing, Faculty of Nursing, Universitas Padjadjaran, Indonesia

<sup>2</sup> Department of Community Health Nursing, Faculty of Nursing, Universitas Padjadjaran, Indonesia

<sup>3</sup> Department of Mental Health Nursing, Faculty of Nursing, Universitas Padjadjaran, Indonesia

<sup>4</sup> Medical Surgical Nursing Department, Universitas 'Aisyiyah, Indonesia

<sup>5</sup> Department of Clinical Medicine, Jawaharlal Nehru Medical College, India

<sup>6</sup> Department of Nursing and Midwifery, Faculty of Medicine and Health Sciences, An-Najah National University, Nablus, Palestine

<sup>7</sup> Master of Nursing Program, Faculty of Nursing, Universitas Padjadjaran, Indonesia

## Abstract

**Background:** Breast cancer presents significant psychological challenges along with physical health concerns, particularly in settings where cultural and spiritual values play a critical role in patient care.

**Objective:** This study aimed to investigate the effect of a religious caring program on the psychological well-being of Indonesian females with breast cancer.

**Methods:** This was a quasi-experimental study with a pretest and posttest control group design, conducted from January to July 2019 at a chemotherapy unit in Bandung, Indonesia. The patients with breast cancer were assigned to the experimental group ( $n = 55$ ) and the control group ( $n = 57$ ). Data were collected using the Psychological Well-Being Scale before and three weeks after the intervention. The data were analyzed using independent  $t$ -test and ANCOVA (Analysis of Covariance).

**Results:** There was a significant improvement in the mean psychological well-being score in the experimental group following the intervention compared to the control group, with the experimental group showing a significantly higher mean score (Cohen's  $d = 1.4548$ ,  $p < 0.001$ ). None of the covariates significantly affected psychological well-being among the experimental group ( $p > 0.05$ ).

**Conclusion:** These results indicate that a religion-based caring program enhances psychological well-being. Thus, the program was effective and particularly well-suited for clinical nurses, suggesting that it should be recommended for Indonesian females with breast cancer to promote their recovery.

## Keywords

Indonesia; breast cancer; caring; religion; female; psychological well-being; spiritual therapy

### \*Corresponding author:


Maria Komariah, S.Kp., M.Kes., PhD  
Department of Fundamental Nursing,  
Faculty of Nursing, Universitas Padjadjaran  
Jl. Ir. Soekarno KM. 21, Hegarmanah,  
Jatinangor, Sumedang 45363, West Java,  
Indonesia  
Email [maria.komariah@unpad.ac.id](mailto:maria.komariah@unpad.ac.id)

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## Background

Advanced breast cancer is the cause of death in 60% of patients in developing countries (da Costa Vieira et al., 2017). The prevalence of advanced breast cancer in Indonesia is steadily increasing, particularly in urban regions such as West Java Province (Oemiati et al., 2012). Those with advanced breast cancer suffer from the threat of death and uncertainty and experience various symptoms, including fatigue, pain, weakness, dry mouth, constipation, weight loss, anorexia, decreased energy, dyspnea, forgetfulness, taste change, and depression due to the disease and its treatment (Cheung et al., 2009). Furthermore, suffering is significantly associated

with secondary psychological symptoms (Almigbal et al., 2019).

Patients experiencing psychological distress may express feelings of pain, hopelessness, fear, anxiety, and depression (Almigbal et al., 2019). An advanced breast cancer diagnosis changes a woman's perception of life along with other lethal conditions (Kedida et al., 2024). Psychological distress in cancer patients significantly impacts both the progression and outcomes of cancer therapy. Furthermore, patients suffering from depression are more likely to not adhere to their treatment regimen, which in turn increases the mortality rate compared with patients without psychological distress. This also puts the person at risk of altered psychological well-being

due to changes in wellness, symptoms associated with the disease and treatment, and the abrupt need to decrease the possibility of dying. Psychological well-being is defined as the state of experiencing wellness, emphasizing positive features of mental health (Boylan et al., 2022).

There is some information in the literature documenting the effects of religious/spiritual interventions on psychological well-being in females with breast cancer. Currently, much empirical evidence indicates that religious/spiritual programs are capable of improving the psychological well-being of patients with breast cancer (Zamaniyan et al., 2016). Moreover, most studies have adopted mindfulness-based stress reduction (MBSR) and cognitive behavioral therapy (CBT) (Hassanzade et al., 2012; Sun et al., 2019; Zhang et al., 2016). Some studies on MBSR and CBT have shown that they can improve the psychological well-being of breast cancer patients, but these programs do not consider the culture and background of the Muslim people. This leads to different acceptance of the programs; therefore, both are difficult to implement without an Islamic approach in populous Muslim countries, such as Indonesia.

In Muslim society, some meditative practices help achieve a peaceful mind, relaxation, and submission to God, namely, Islamic prayer and dhikr meditation. Every Muslim needs to perform Islamic prayer five times daily, whereas meditation is usually practiced twice a day afterward as an additional recommended worship. As a result, the effectiveness of MBSR and CBT might be limited without incorporating an Islamic approach.

In Indonesia, where Islam plays a significant role in the cultural and spiritual lives of its population, understanding how religious practices intersect with healthcare is crucial. The majority of Indonesians are Muslim, and their faith significantly influences their daily practices and coping mechanisms, especially in the context of serious illnesses such as cancer (Utomo et al., 2022). Some researchers have developed spiritual therapies based on the Islamic perspective applied in Muslim countries such as Iran to improve psychological well-being. There are several similarities among the several Islamic intervention programs that have been developed and used. In such cases, trust in and connection to God, including ritual practices such as prayer and meditation, in combination with other concepts such as forgiveness, altruism, thankfulness, and patience, are emphasized (Fallah et al., 2011; Hosseini et al., 2016; Jafari et al., 2013). Moreover, the researchers were unable to integrate the concept of caring into a spiritual intervention program. In fact, caring is often described as the essence of nursing (Watson, 2009). Furthermore, it is a way of being and knowing, a body of knowledge, a moral idea (ethics), the art of practice (aesthetics), and sociocultural phenomena (Ray, 1989).

On the basis of reviews and considerations from several programs to improve psychological well-being, MBSR, and spiritual interventions still have limitations. Therefore, these programs might not be appropriate for Muslim patients. To overcome this gap, this study attempts to develop a religious-based caring program (RCP) for Indonesian females with breast cancer, using the practice of meditative prayer and dhikr meditation integrated with Islamic caring. This program integrates Islamic religious practices, such as prayer and dhikr meditations, with principles of Islamic caring. Islamic caring

emphasizes trust in and connection with God alongside ritual practice and values such as forgiveness, altruism, thankfulness, and patience. The program is feasible and worth promoting Islamic religion-based programs to improve psychological well-being in females with advanced breast cancer. Therefore, this study aimed to investigate the effects of a religion-based caring program on the psychological well-being of Indonesian females with breast cancer.

This study focused on the implications for nursing practice, recognizing the necessity of including spiritual and religious aspects in the holistic care of breast cancer patients. Spiritual care is considered a crucial aspect of a nurse's responsibilities. This aligns with the comprehensive nature of the nursing role, which aims to provide holistic care by addressing patients' physical, psychological, social, and spiritual needs (Nilsson, 2022). Nurses who receive additional training and education in managing spiritual care will be more prepared to support patients holistically per their religious values and beliefs. The findings of this study are intended to help shape health policies that incorporate spiritual care into comprehensive and personalized care (Ebrahimi et al., 2017).

## Methods

### Study Design

This was a quasi-experimental study with a pretest and posttest control group design, which was carried out at the Asnawati unit of a teaching hospital in Bandung, Indonesia, from January to July 2019. This study examined the effect of the Religious Caring Program (RCP) on psychological well-being. The research question in the study was whether the mean scores of the psychological well-being of the patients in the religion-based care program were higher than those of the patients in the control group.

### Samples/Participants

The population of this study included 134 Indonesian Muslim patients with advanced breast cancer, both new and recurrent cases of chemotherapy treatment, in the Asnawati unit of a teaching hospital in Bandung, Indonesia. In addition, they met the following inclusion criteria: 1) being Muslim; 2) being aged more than 21 years; 3) having a medical record showing stage III breast cancer; 4) being mentally healthy and not having a history of mental illness; 5) being able to speak and understand Bahasa Indonesia; 6) having access to a telephone; and 7) receiving chemotherapy treatments every 21 days.

To calculate the sample size, a priori power analysis using G\*Power was used, indicating that a minimum sample size of 51 participants per group (total of 102 participants) was needed to detect a medium effect size (Cohen's  $d = 0.50$ ) with a significance level of 0.05 and a power of 0.80.

A consecutive sampling method was employed to select 134 patients, beginning with the order of arrival of those who satisfied the inclusion criteria and continuing until the minimum sample size requirements were fulfilled. Before the intervention began, 14 participants declined to participate in this study. During the study period, another eight people discontinued their participation, and the major reason for this was the change in treatment. The final sample comprised 112

participants, with 55 in the experimental group and 57 in the control group.

### Intervention

The experimental group included breast cancer patients who received a religious-based care program, namely, Islamic prayer, breath *dhikr* meditation, and an Islamic caring approach. The participants were instructed to practice Islamic prayer five times a day, along with breath *dhikr* meditation twice a day, ideally in the early morning and at night, for a duration of 21 days in their own homes.

Patients were advised to carry out the program independently in their own homes. To ensure compliance and monitor adherence to the program, the participants were provided with a diary to record their daily practice of prayer and *dhikr* meditation. Research assistants made weekly phone calls to each participant to provide support, answer any questions, and encourage adherence to the program. Additionally, participants returned their diaries at the end of the 21-day period during their subsequent chemotherapy session. The researcher convened with all the subjects in the oncology department on the 21st day for the subsequent cycle of chemotherapy treatment.

The individuals in the control group received standard care. The researcher presented details on the program and asked the participants to provide their signatures on an informed consent form. The nursing team provided routine care services, including educating patients about chemotherapy and addressing typical issues related to its side effects. The nurses were also responsible for administering chemotherapy drugs and infusions. Additionally, the control group received RCP after the study was completed.

### Instrument

The psychological well-being levels of the participants were assessed using the Psychological Well-Being (PWB) Scale (Ryff, 1989). The scale was used to measure the causes and consequences of positive psychological functioning. This study used a 21-item version, which is the most common (Sirigatti et al., 2013). This consists of six 3-item scales: autonomy, positive relationships with others, and self-acceptance, and four items for environmental mastery, purpose in life, and personal growth (Ryff, 1989). Higher scores indicate a greater level of psychological well-being. The response options ranged from 1 (strongly disagree) to 6 (strongly agree), and 11 items had reverse scores.

Proper permission was obtained to use the PWB Scale in this study, ensuring adherence to copyright and usage guidelines. The Cronbach's alpha coefficient for the translated version was 0.845, while the validity range scores ranged from 0.306 to 0.731 (Amalia, 2016). All instruments (scales) were translated into Bahasa Indonesia following this standard translation-back translation process to maintain the validity and reliability of the measures (Amalia, 2016).

### Data Collection

Three research assistants were enlisted to carry out the data collection task. After receiving informed consent, the research assistants gathered the necessary data for both groups. The demographic background and clinical characteristics of all

participants were collected on day 1 (baseline) and day 23 via the Demographic Data Questionnaire (DDQ) and PWB Scale, which includes information on demographics and medical history. It contains items on age, education, occupation, marital status, breast cancer staging, surgery, chemotherapy cycle and treatment, and comorbidities.

At the first meeting with possible participants, they were given the baseline assessment and program directions. This was done when they came to the outpatient oncology clinic for their first cycle of chemotherapy, which was based on their individual treatment plan. In a face-to-face meeting, the researcher told the subjects about the intervention program. The program consisted of a *khusyu* prayer, breath *dhikr* meditation, and an Islamic caring approach that the participants followed during the research study. In addition, the PWB was evaluated among participants following permission, serving as the initial assessment. A reassessment of the PWB was undertaken on day 23 among the participants.

### Data Analysis

Data analysis was performed using Jamovi 2.3.28. Categorical variables are represented descriptively using frequencies and percentages, whereas continuous variables are documented using the mean (SD) and range. An independent *t*-test was used to compare the between-group differences. ANCOVA (Analysis of Covariance) was performed to examine the effects of the religion-based caring program on psychological well-being while controlling for baseline levels of demographic and clinical variables as covariates.

### Ethical Considerations

The study obtained ethical approval from Universitas Padjadjaran, Institutional Review Board of the Health Research Ethics Committee (document number 531/UN6 C10/PN/2017, No Reg: 0817030371). Prior to commencing the study, the researcher obtained the participants' informed consent and provided them with details regarding the study's aims, advantages, and maintenance of confidentiality throughout and after its completion. This ensured that participants were fully informed and their rights were protected during the research process.

## Results

### Characteristics of the Participants

At baseline, the participants were comparable in terms of the demographic variables of age, education, occupation, marital status, breast cancer staging, surgical treatment, chemotherapy treatment, chemotherapy cycle, and comorbidities. Table 1 shows that there were no significant differences in demographic characteristics between the intervention and control groups. Both groups had similar mean ages and educational backgrounds, with evenly distributed occupational fields and marital statuses. Breast cancer stages, surgical treatments, chemotherapy protocols, and the number of chemotherapy cycles were also balanced. The presence of comorbid conditions was evenly distributed. This comparability ensures that observed differences in outcomes can be confidently attributed to the intervention rather than participant characteristics.

**Table 1** Participants' characteristics at enrolment

Variable	Experimental Group (n = 55) f (%)	Control Group (n = 57) f (%)	p-value
<b>Age (years)</b>	Mean = 46.2, SD = 8.56	Mean = 46.5, SD = 9.38	0.847
<b>Education</b>			
Primary	35 (63.6)	28 (49.1)	0.325**
High school	18 (32.7)	25 (43.9)	
University	2 (3.7)	4 (7.0)	
<b>Occupation</b>			
Unemployed	43 (78.2)	44 (77.2)	1.000*
Employed	12 (21.8)	13 (22.8)	
<b>Marital status</b>			
Single/Widow	7 (12.7)	10 (17.5)	0.701*
Married	48 (87.3)	47 (82.5)	
<b>Breast cancer staging</b>			
IIIa	14 (25.5)	23 (40.4)	0.196**
IIIb	38 (69.0)	30 (52.6)	
IIIc	3 (5.5)	4 (7.0)	
<b>Surgical treatment</b>			
No	35 (63.6)	34 (59.6)	0.701*
Yes	20 (36.4)	23 (40.4)	
<b>Chemotherapy treatment</b>			
FAC	43 (78.2)	48 (84.2)	0.222**
TAC	8 (14.6)	5 (8.8)	
AC+paclitaxel	2 (3.6)	4 (7.0)	
Others	2 (3.6)	-	
<b>Chemotherapy cycle</b>			
1	22 (40.0)	21 (36.8)	0.320**
2	14 (25.4)	21 (36.8)	
3	9 (16.4)	7 (12.3)	
4	10 (18.2)	8 (14.0)	
<b>Comorbidities</b>			
Yes	4 (7.3)	10 (17.5)	0.152***
No	51 (92.7)	47 (82.5)	

Note: \* = Chi-square test, \*\* = Likelihood ratio, \*\*\* = Fisher's exact test

Fluorouracil/doxorubicin/cyclophosphamide (FAC), Docetaxel/doxorubicin/cyclophosphamide (TAC), doxorubicin/cyclophosphamide followed by paclitaxel (AC + paclitaxel)

**Table 2** Comparison of the psychological well-being scores between the experimental and control groups (N = 122)

Time	Experiment (n = 55) Mean (SD)	Control (n = 57) Mean (SD)	Cohen's d	95% CI (Lower, Upper)	p-value
<b>Pretest</b>					
Day-1	96.9 (12.2)	96.9 (11.9)	-0.0019	(-0.37, 0.37)	0.965
<b>Posttest</b>					
Day-23	108.3 (14.6)	89.9 (17.4)	1.4548	(0.71, 1.57)	<0.001*

Note: Levene's test ( $F_{(1,110)} = 0.222, p = 0.638$  for pretest); ( $F_{(1,110)} = 1.822, p = 0.180$  for posttest)

Kolmogorov-Smirnov test (the pretest and posttest results:  $p = 0.457$  and  $p = 0.611$ , respectively)

**Table 3** Covariance analysis of the effect of religious-based caring programs on psychological well-being

Potential of Covariate	Sum of Square	df (39)	F	p-value	$\eta^2$
<b>Demographic characteristics</b>					
Age	280.09	1	1.3435	0.253	0.025
Education	160.15	2	0.3841	0.684	0.014
Occupation	4.55	1	0.0218	0.883	0.000
Marital status	271.26	1	1.3011	0.261	0.024
<b>Clinical characteristics</b>					
Stage	42.57	2	0.1021	0.903	0.004
Surgical treatment	743.28	1	3.5652	0.066	0.066
Chemotherapy regimen	1243.76	3	1.9886	0.132	0.111
Chemotherapy cycling	73.2	3	0.1167	0.950	0.006
Comorbidities	304.86	1	1.4623	0.234	0.027

## The Impact of Religion-Based Caring on Psychological Well-Being

As shown in [Table 2](#), there was no statistically significant difference in the mean psychological well-being score at baseline (day 1) between the intervention and control groups ( $p = 0.965$ ). The mean score in the experimental group on day 23 was significantly greater than that in the control group (Cohen's  $d = 1.4548$ ,  $p < 0.001$ ).

An analysis of covariance (ANCOVA) was conducted to evaluate the effect of a religion-based caring program on psychological well-being, considering several potential covariates ([Table 3](#)). None of the covariates significantly impacted psychological well-being among the experimental group. Levene's test revealed homogeneity of variance ( $F_{(41,13)} = 1.17$ ,  $p = 0.398$ ). While some variables, such as surgical treatment, had potential effects ( $F_{(1,39)} = 3.5652$ ,  $p = 0.066$ ,  $\eta^2 = 0.398$ ), the impact was not strong enough to be considered statistically significant.

## Discussion

### Principal Findings

The results revealed a significant difference in psychological well-being scores between the intervention and control groups on day 23. Furthermore, the experimental group showed an increase in the mean scores on day 23, even though there were no significant differences at baseline in either group. From day 1 to day 23, the experimental group had significantly greater mean scores than the control group. The results revealed that the psychological well-being in the experimental group was much greater than the control group, suggesting that the RCP program had a cumulative effect on the experimental group. This contributed to the increase detected in the experimental group on day 23.

The findings of the present study revealed that RCP enhance psychological well-being among Indonesian females with breast cancer after three weeks of follow-up. This finding aligned with previous studies in which spiritual-religious-based programs were employed. After six weeks of spiritual therapy, breast cancer patients report improved psychological health ([Jafari et al., 2013](#)). In an additional trial, the number of participants who were enduring six weeks of radiation for stage I - III breast cancer patients and had 12 sessions of meditation therapy increased ([Kim et al., 2013](#)). The therapeutic program in this trial, however, lasted only three weeks. Moreover, the same result was reported from the quasi-experimental project, where among 12 participants in the experimental group of patients with breast cancer in Iran, 12 sessions of spiritual therapy were used, which lasted for 120 minutes weekly. They concluded that spiritual treatment helps improve psychological well-being ([Zamaniyan et al., 2016](#)).

This study revealed that caring for breast cancer patients based on their religion improved their psychological well-being. This was because the program was structured and created with Islamic principles as its main focus. Effective psychological and spiritual care was the main way to improve well-being; consequently, nurses used Islamic prayer and breathing meditation as part of their care activities. Researchers have reported that people who pray have good expectations about stress because they think positively about stressful events ([Sayeed & Prakash, 2013](#)). Additionally,

Islamic prayers can provide psychological benefits such as stress relief, increased subjective well-being, interpersonal sensitivity, and mastery ([Henry, 2015](#)). Prayer, when performed correctly, provides the joy of being in the presence of God, comfort in times of fear and pleasure, retaining the spiritual character of the soul, and maintaining faith. Prayers are useful guidance, particularly in approaching psychological maladjustments ([Imamoglu, 2016](#)).

Similarly, dhikr meditation has psychological and spiritual benefits that provide a feeling of comfort and focus on God and the conscious mind ([Sanjotis, 2018](#)). In addition, among Muslims, belief in God (Allah) helps when something wrong happens in their lives, such as having a problem or sickness. They believe that touching Allah helps to strengthen their soul, body, and mind ([Nasiri et al., 2017](#)). Islamic care has been proven to lead to good health outcomes by providing education related to disease and treatment and incorporating healing strategies ([Ismail & Hatthakit, 2018](#)). Caring for Islamic religious practices helps patients feel secure, safe, and confident without being lonely ([Komariah et al., 2020](#); [Komariah et al., 2021](#)).

The effectiveness of the program can be understood through the body-mind-spirit model, which suggests that health and well-being are influenced by the interconnectedness of physical, mental, and spiritual factors ([Mark & Lyons, 2014](#)). The RCP integrates Islamic prayer, dhikr meditation, and an Islamic caring approach, each contributing to psychological well-being in distinct ways. Performing daily prayers offers a structured routine that helps individuals feel a sense of control and stability, providing a direct connection to God and fostering a sense of spiritual fulfillment and emotional support. Prayers can also serve as a form of meditation or relaxation, helping to reduce stress and anxiety by promoting mindfulness and focusing on the present moment. This aligns with Benson's concept of the relaxation response, the physiological counterpart to the stress response, which the central nervous system manages through self-regulation and stress-relaxation mechanisms ([Benson & Klipper, 1975](#)). The beneficial behaviors that combat stress are neurobiologically rewarded with pleasure, reinforcing these positive behaviors. This self-regulation involves the release of dopamine, endocannabinoids, endorphins, and stress hormones, as well as the oxytocin and serotonin signaling pathways, many of which act through nitric oxide (NO) release, ultimately reducing stress ([Esch & Stefano, 2022](#)).

Although the RCP was effective in this study, potential biases and confounding factors might have influenced the results. Differences in personal motivation, support systems, or prior exposure to religious practices could impact outcomes ([An et al., 2024](#); [Koburtay et al., 2023](#); [Ryff, 2021](#)). Participants who are more personally motivated or have stronger support systems may be more likely to engage fully with the intervention. The sense of selfless assistance and decision-making support from families enhances individuals' happiness, aligning with the principles of social support theory ([Cohen & Wills, 1985](#)). This theory posits that when individuals encounter stress and challenges, receiving emotional, informational, and practical support from others positively influences their emotional well-being ([Cohen & Wills, 1985](#)). Future studies should control for these variables, possibly

through randomization and stratification, to ensure a more accurate assessment of the intervention's effectiveness.

### Implications for Nursing Practice and Further Research

This study highlights the potential of RCP to significantly improve the psychological well-being of patients with breast cancer, emphasizing the need for a more integrated approach in nursing practice. Nurses are pivotal in implementing these spiritual care components, which should be considered essential elements of holistic patient care, especially in culturally and religiously cohesive societies (Biro, 2012; Speck, 2016). Effective integration of these practices requires training and a shift in nursing education curricula to include spiritual care competencies (Attard et al., 2019). Such changes will equip nurses with the necessary skills to address the diverse spiritual needs of patients sensitively and effectively. Further research should focus on quantifying the impact of these programs on various clinical outcomes, which could strengthen their integration into standard nursing practice. Longitudinal studies could explore the sustained effects of spiritual care over treatment and recovery.

In contrast, comparative studies could help identify which aspects of religion-based care are most beneficial and under what circumstances. Such insights would be invaluable for refining nursing practices and health policies to accommodate the spiritual dimensions of patient care better. Additionally, while the control group in this study received standard care, it is essential to consider whether they should have received an attention-control intervention to rule out the effects of additional attention or support that the experimental group might have received. This extra attention could have influenced the psychological outcomes observed.

### Limitations

A limitation of this study is that it focused only on psychological well-being. Thus, other aspects of spiritual distress, physical distress, and quality of life should also be studied because the current study revealed that psychological problems might affect the physical and spiritual dimensions of patients due to the side effects of chemotherapy. While the sample size is adequate for this study, the use of a consecutive sampling method and a single hospital unit limits the generalizability of the findings. Future studies should consider using random sampling and include multiple settings to increase the generalizability of the results. Moreover, the intervention duration of three weeks was relatively short. Future research should consist of more extended follow-up periods to assess the sustainability of the intervention's effects.

This study is conducted within a specific cultural and religious context, focusing on Muslim women in Indonesia. This cultural and religious specificity may limit the generalizability of the findings to other populations with different cultural or religious backgrounds. While the results demonstrate the effectiveness of the RCP in enhancing psychological well-being among Indonesian Muslim women, these findings may not be directly applicable to non-Muslim populations or those from different cultural contexts.

## Conclusion

The religion-based care program was beneficial for Indonesian female breast cancer patients undergoing chemotherapy. This study used spiritual interventions, namely, prayer and breath *dhikr* meditation practices, and an Islam-based caring approach that played an essential role in healing and recovery. Consequently, this helps strengthen the soul, body, and mind, as well as the interconnectedness of emotions, the environment, relationships, and sociocultural aspects of life. Therefore, to provide better care for patients, nurses should include religious-based care programs in their usual care for breast cancer patients, especially in settings that are sensitive to different cultures. This can lead to a more complete care plan that addresses physical and psychological wellness, improving patients' well-being, and possibly leading to better treatment adherence and outcomes.

### Declaration of Conflicting Interest

There are no ethical or financial issues, conflicts of interest, or animal experiments related to this research.

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### Authors' Contributions

Conception and design (MK), data analysis and interpretation (MK, HRA), manuscript draft (MK, HRA, LR, KK, NG), critical revision of the manuscript (SM, SGQ, and AM). All authors approved the final version of the articles and were accountable in each step of the study.

### Authors' Biographies

**Maria Komariah, S.Kp., M.Kes., PhD** is an Associate Professor at the Faculty of Nursing, Universitas Padjadjaran. Her research interests are spiritual care nursing, holistic and complementary care nursing, cancer care, and nursing management.

**Hana Rizmadewi Agustina, S.Kp., MN., PhD** is an Assistant Professor at the Faculty of Nursing Universitas Padjadjaran. Her research interests are nursing education, palliative and end-of-life care, and nursing management.

**Laili Rahayuwati, Dra., M.Kes., MSc., DrPH** is a Lecturer in the Department of Community Nursing, Faculty of Nursing, Universitas Padjadjaran. Her research interests are health promotion, health behavior, and community public health nursing.

**Kurniawan, S.Kep., Ners., M.Kep., Sp.Kep.J** is a Junior Lecturer in Mental Health Nursing at the Department of Mental Health Nursing, Faculty of Nursing, Universitas Padjadjaran. He has research interests in digital mental health, domestic violence, gender and sexuality, cyberbullying, mental health in academia, and stress management.

**Nina Gartika, S.Kp., M.Kep** is a Senior Lecturer at Universities 'Aisyiyah. Her research interests are medical-surgical nursing and complementary nursing.

**Arpit Mago, MBBS** is a Medical Graduate from Jawaharlal Nehru Medical College, Belgaum, Karnataka, India, with a keen interest in Public Health and Digital health.

**Shrouq Ghalib Qadous, BSN, MSN, PhD(c)** is an Assistant Professor at the Department of Nursing and Midwifery, An-Najah National University. Her research interests are maternal and child health, women's health, and reproductive health.

**Sidik Maulana, S.Kep., Ners** is a Magister-PhD student at the Faculty of Nursing, Universitas Padjadjaran. His research interests are HIV/AIDS, chronic care nursing, and palliative care.

## Data Availability

The datasets are available from the first or corresponding author upon reasonable request.

## Declaration of Use of AI in Scientific Writing

None to declare.

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