

VALIDITY AND RELIABILITY TESTS OF INSTRUMENTS MEASURING PREGNANT WOMEN'S SPIRITUAL NEEDS

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ABSTRACT

Measuring the spiritual needs of pregnant women is crucial, as they play a key role in how women develop coping mechanisms during pregnancy. This study aims to test the validity and reliability of a spiritual needs assessment instrument for pregnant women. The instrument's validity and reliability were evaluated through questionnaires administered to 115 pregnant women, using a modified version of Galek's Patient Spiritual Needs Assessment Scale with a 5-point Likert response format ranging from very insufficient (1) to very sufficient (5). The Pearson correlation test of the 38 statements in the Spiritual Instrument for Pregnant Women (SIPW) showed that 36 statements were valid, with r values ranging from 0.401 to 0.727 ($r \geq 0.3$). However, two statements were found to be invalid: one item related to the sense of pleasure ($r=0.286$) and another item related to the ability to derive wisdom ($r=0.174$). The Cronbach's Alpha coefficient ranged from 0.937 to 0.942 (>0.7). This result indicates that the instrument can reliably validate and measure spiritual needs, enabling maternal health care providers to offer holistic care. Thus, providers can support the diverse spiritual adaptations experienced by pregnant women throughout each trimester by including spiritual aspects in maternity care.

Keywords: *Instrument; maternity care; pregnant women; spiritual needs*



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BACKGROUND

Spiritual needs play a crucial role in the coping mechanisms of pregnant women when facing the challenges of pregnancy (Mutmainnah and Afiyanti, 2019). Pregnant women require spiritual support to manage the discomforts of pregnancy, embrace their identity as women, and prepare for childbirth. In Indonesia, assessing the spiritual needs of pregnant women requires a distinctive approach because the sociocultural context, including religious values and cultural plurality, strongly influences societal norms.

Indonesian society is deeply rooted in religious beliefs and cultural practices that influence pregnancy, childbirth, and the postpartum period (Rachmayanti *et al.*, 2023). The pregnancy period is seen as an opportunity to grow closer to God and to find greater meaning in life, with religious beliefs serving as a powerful coping mechanism (Backes *et al.*, 2022; Sotudeh, Hasanpoor-Azghady and Amiri-Farahani, 2022).

Meanwhile, maternal health services are primarily focused on physical health, treatment, baby care, and family planning

(Kementerian Kesehatan, 2024). There is a growing need for the development of maternal and children's health services that integrate spirituality to better support pregnant women during pregnancy. A previous study has also shown that the inclusion of spiritual content in midwifery counseling had positive effects on the psychological well-being of pregnant women (Monfaredkashki, Maleki and Amini, 2022). Spiritual needs play a critical role in supporting pregnant women's psychological and emotional well-being. It enables them to accept their circumstances with sincerity, derive meaning from their pregnancy experience, and cultivate resilience, patience, and inner peace in facing their conditions.

Five themes related to spiritual experiences during pregnancy have emerged from past literature: (1) Obedience to God makes it easier for pregnant women to go through pregnancy and childbirth; (2) Finding meaning in spiritual stories increases self-confidence, motivation, and perseverance during pregnancy and childbirth; (3) Remembering God provides a means to control emotions, reduce anxiety, and manage labor pain; (4) Faith in God's help increases self-confidence during labor; and (5) A strong

faith and close relationship with God help pregnant women overcome the challenges of pregnancy and childbirth (Mutmainnah and Afyanti, 2019).

Holistic maternity care has an important role in optimizing spiritual well-being and existing resources to improve maternal health. Addressing spiritual needs during pregnancy is essential, as spirituality-based midwifery care has been shown to reduce pregnancy-related anxiety, reduce labor pain, and improve fetal well-being (Waroh *et al.*, 2022). Moreover, empirical evidence suggests that spirituality during pregnancy is associated with reduced levels of stress, anxiety, and depression, as well as enhanced overall quality of life among pregnant women (Arbabi, 2023). Therefore, to provide holistic prenatal care that incorporates spiritual aspects, a reliable instrument to measure spirituality in pregnant women is needed.

Despite the importance of assessing spiritual needs during pregnancy, no validated and reliable instrument exists for this purpose. Although instruments such as the Spiritual Well-Being Scale have been used in previous studies (Kiyak, 2025; Panahi *et al.*, 2025), they may not fully capture the nuanced spiritual experiences of pregnant women across different cultural settings. As the demand for holistic maternity care increases, developing a tool to measure pregnant women's spiritual needs has become increasingly important. Validating such an instrument is also essential for integrating spiritual aspects into maternity care and ensuring its effectiveness in addressing the psychological and emotional well-being of expectant mothers.

Several studies have developed and validated instruments for measuring spirituality and religiosity. These instruments were designed for specific populations, medical conditions, and social contexts influenced by language and culture. Examples include instruments measuring the spiritual needs of students in medical education institutions (Biglari Abhari *et al.*, 2018), high school students (Hudha and Mardapi, 2018), and pregnant women coping with the psychological challenges of childbirth (Radu *et al.*, 2025). Additionally, validated instruments such as the Chinese version of a spiritual needs scale for cancer patients (Zhao *et al.*, 2019) and the Persian version of an assessment of spirituality and mental health (Saffari *et al.*, 2017) have been adapted for clinical settings (Austin, Macdonald and Macleod, 2018).

The validation of measurement tools for spirituality and religiosity is critical, as accurate tools can help healthcare professionals better understand these factors and improve maternal and child health services. Thus, developing this instrument will provide significant benefits in improving maternal well-being and creating more effective health services tailored to the spiritual needs of expectant mothers. Unlike previous studies, this research focuses on validating a spiritual needs instrument specifically for pregnant women in an Indonesian cultural context. The instrument includes aspects such as patience, gratitude, contentment, and the ability to derive wisdom from experiences. This study aims to assess the validity and reliability of the instrument and ensure its effectiveness in addressing the unique spiritual needs of pregnant women.

METHOD

Study design

The study used a quantitative research design with a cross-sectional approach. The researchers modified a questionnaire to identify the spiritual needs of pregnant women.

Sample/ Respondents

The study population consisted of 199 pregnant women from 16 health centers in Klaten, Central Java, Indonesia, with approximately 12 to 13 participants recruited from each center. A total of 115 eligible respondents were included who met the following criteria: healthy, able to read and write, and capable of independently completing the questionnaire. The sample size met the minimum requirement for validity testing based on a 1:3 item-to-respondent ratio (Gunawan, Marzilli and Aungsuroch, 2021). The minimum sampling criteria (38 items: 115 participants) for validating the spiritual needs questionnaire for pregnant women in this study were adopted due to the limited availability of eligible participants within the study setting.

Instrument

A questionnaire was used to collect data on the respondents' characteristics and their spiritual needs. The characteristics included maternal age, education level, and occupation. The section of the questionnaire designed to measure the spiritual needs of pregnant women was a modified version of the Spiritual Needs Assessment Scale developed by Galek (Galek *et al.*, 2005).

The instrument was originally developed to identify patients' spiritual needs in clinical settings. The scale consisted of 29 items that addressed various domains, including love/belonging/respect; divinity; positivity/hope/ gratitude/ peace; meaning and purpose; morality and ethics; appreciation of beauty; and resolution/death (Galek *et al.*, 2005).

The researcher modified the original instrument to better capture the spiritual needs of pregnant women, while considering the socio-cultural context and specific needs of pregnant women in Indonesia. The original instrument was also translated into Bahasa Indonesia. The instrument was further tested for validity and reliability after these language changes and modifications.

After modification and translation, the instrument consisted of 38 items divided into five categories: patience (11 items), gratitude (11 items), pleasure (10 items), and the ability to derive wisdom (6 items); this version of the instrument aimed to identify the spiritual needs of pregnant women. A 5-point Likert scale was used in this study, with the following options: very insufficient (score 1), insufficient, unsure, sufficient, and very sufficient (score 5), for a total possible score of 190.

Data collection

The study was conducted between August and November 2024. Data collection was conducted in four stages: content validity involving experts, the construct validity assessment, readability testing, and validity and reliability testing on respondents (Boateng *et al.*, 2018).

In the first stage, the researcher developed an instrument that considered the spiritual and cultural needs commonly observed among pregnant women to ensure its content validity. This process involved analyzing word choices to ensure clarity, simplifying foreign terms, and identifying relevant cultural and religious practices during pregnancy. The researcher concluded that the test items effectively measured the relevant spiritual aspects in pregnant women and proceeded with compiling the instrument.

The second stage involved conducting a construct validity assessment through a focus group discussion (FGD) with five religious leaders (representing Islam, Christianity, Catholicism, Hinduism, and Buddhism), two representatives

from professional midwifery organizations, seven midwife coordinators from health centers, and one expert in Bahasa Indonesia. The FGD results indicated that the instrument was acceptable for use, with several recommended improvements. Construct validity was then calculated using Aiken's test formula (Mansyur and Manaf, 2023).

In the third stage, the researchers conducted a readability test on non-respondents, in which each item was evaluated using three categories: "good" if the statement was easily understood without the need for clarification; "fair" if it was understood with minor difficulty or after an additional explanation; and "poor" if it remained difficult to understand even after clarification, resulting in incorrect or incomplete responses.

Table 1. The results of Aiken's V content validity test on an instrument with 38 items and a categorical assessment scale of 1-5

Test period	R1	R2	R3	S1	S2	S3	ΣS	n(C-1)	ΣS/n(C-1)
Before modification	151	160	140	113	122	102	337	456	0.74
After modification	172	184	177	134	146	139	419	456	0.92

Description: $V = \sum S / [n(C-1)]$. $S = R - Lo$. $V = \text{Aiken index}$. $S = \text{score given by the rater minus the lowest score}$.

$R = \text{score given by the rater}$. $Lo = \text{lowest assessment score (1)}$. $C = \text{highest assessment score (4)}$. $n = \text{number of raters}$

All respondents' answers were coded, inputted, and then analyzed using IBM SPSS version 22. Next, the researchers used the Pearson Correlation Coefficient (Pearson's r) to assess the cross-validity value of the item scores and total scores (Aslan Çin *et al.*, 2021). An item was classified as valid if the item score correlated significantly with the total score ($r \text{ count} > r \text{ table}$) (Humphreys *et al.*, 2019) and if the corrected item-total correlation was greater than 0.3 with a 95% confidence level (Hudha and Mardapi, 2018). The reliability test was conducted using Cronbach's alpha, with the coefficient values compared against the standard reliability threshold of 0.7 or higher.

Ethical consideration

The respondents in this study signed an informed consent in Bahasa Indonesia. The study received ethical clearance from Poltekkes Kemenkes Surakarta, certificate number: DP.04.04/F.XXV.1/827/2024.

RESULT

The calculation results using the Aiken formula before improvements showed a value of 0.74, which falls into the moderate category. After consultation with experts and improvement of the instrument, the value increased to 0.92, placing it in the high category (Table 1).

Next, the readability test results showed that 82% of respondents could read and understand the instrument. The average readability score was 2.8 on a scale of 3, with an average reading time of 12 minutes. These findings confirm that the research instrument meets adequate readability standards.

Next, the researchers tested the validity of the factors and the items in the instrument. Pregnant women filled out the questionnaire using Google Forms after signing the informed consent. The researchers were assisted by regional midwives to distribute questionnaires to pregnant women.

Data analysis

A univariate analysis was used to test the validity of spiritual instruments for pregnant women. Descriptive statistics were used for the construct validity and readability tests. Validity testing was conducted to measure the instrument's effectiveness in identifying and measuring the spiritual needs of pregnant women.

The respondents' characteristics in the validity and reliability test showed that the majority were women of healthy reproductive age, with secondary school education or higher, and were multigravida (Table 2). The respondents received standardized instructions for interpreting the questionnaire items to prevent any misunderstandings, and they took 15-20 minutes to complete the questionnaire independently.

Table 2. Respondents' characteristics (n=115)

Characteristics	n (%)
Age	
Healthy reproduction	98 (85.2%)
Unhealthy reproduction	17 (14.8%)
Education	
Primary	27 (23.5%)
Secondary	68 (59.1%)
Higher education	20 (17.4%)
Parity	
Primiparous	33 (28.7%)
Multiparous	82 (71.3%)
Occupation	
Not working	81 (70.4%)
Working	34 (29.6%)

The Pearson correlation test of the instrument indicated that 36 statements were valid, and two were invalid. The valid statements comprised five aspects: patience (11 items), gratitude (11 items), pleasure (9 items), and the ability to derive wisdom (5 items), with correlation values ($r \text{ count}$) ranging from -0.401 to 0.727, all above the threshold of 0.3.

Table 3. Validity and reliability of the spiritual needs scale for pregnant women

Domain	No	Topics	Corrected item-total correlation	Cronbach's Alpha if item deleted	Cronbach Alpha
Patience	1	Need/feel more loved by your family	0.111	0.908	0.898
	12	Easier to forgive	0.120	0.900	
	13	Apologize to others	0.180	0.899	
	15	Get closer to the greatness of God Almighty	0.363	0.896	
	28	Living in an ethical environment	0.332	0.897	
	30	Diligent in worship	0.498	0.894	
	31	Thinking positively	0.568	0.894	

Domain	No	Topics	Corrected item-total correlation	Cronbach's Alpha if item deleted	Cronbach Alpha
Gratitude	32	Sympathizing and empathizing	0.684	0.891	
	38	Consuming halal and good food	0.355	0.897	
	3	Feeling concerned about others	0.415	0.896	
	4	Reflecting on previous lifestyle	0.618	0.893	
	6	Living in a place that supports pregnancy	0.504	0.895	
	9	Becoming a loving person	0.339	0.897	
	11	Becoming a source of happiness for the family	0.319	0.897	
	14	Praying and asking for prayers from others	0.603	0.893	
	16	Often reading holy books	0.574	0.893	
	17	Participating and being enthusiastic in religious rituals	0.305	0.897	
	24	Being grateful or thankful for the pregnancy given by God Almighty	0.575	0.893	
	27	Praying to have a child who is physically and mentally healthy	0.498	0.896	
	33	Caring for and fulfilling pregnancy needs	0.445	0.897	
The sense of pleasure	5	Appreciate the beauty of sound (such as murottal, spiritual songs, meditation rhythms, classical music)	0.701	0.891	
	7	Find wisdom from discomfort during pregnancy	0.372	0.896	
	8	Tell others about the meaning of pregnancy in life	0.302	0.897	
	10	Respecting yourself more	0.599	0.893	
	18	Feeling more perfect as a woman and mother	0.560	0.893	
	19	Share pregnancy experiences with others	0.709	0.890	
	22	Discuss pregnancy more often with family	0.454	0.896	
	23	Evaluate/reflect on yourself more often	0.325	0.897	
	29	Feeling peace of mind by enjoying the beauty of nature (such as doing contemplation of nature)	0.118	0.900	
	34	Enjoy the happiness of pregnancy more	0.606	0.893	
	35	Ready to face childbirth	0.302	0.897	
The ability to derive wisdom	2	Need to talk about fears/concerns/anxiety of pregnancy	0.530	0.894	
	20	Be more considerate of family in various matters	0.332	0.897	
	21	Get more support from family	0.507	0.894	
	25	Understand issues before childbirth	0.204	0.899	
	26	Establish friendships and spiritual bonds with other pregnant women	0.709	0.890	
	36	Increase good deeds	0.327	0.897	
	37	Ready physically and mentally to undergo pregnancy and childbirth	0.133	0.900	

The two invalid items were from the aspects of pleasure (1 item, r count = 0.286) and the ability to derive wisdom (1 item, r count = 0.174). Therefore, the two invalid statements were removed, and the study was continued using the 36 valid statements (Table 3).

The Cronbach's alpha coefficients for the 38-item spiritual needs instrument ranged from 0.937 to 0.942 upon deletion of individual items, consistently exceeding the established reliability threshold of 0.7, indicating that the spiritual needs instrument for pregnant women is highly reliable. The detailed Cronbach's alpha values for each item deletion are shown in Table 3.

DISCUSSION

Previous research focused on the spirituality of hospitalized cancer patients (Hatamipour *et al.*, 2018). Thus, content adaptation was necessary to align the instrument with the lived experiences of pregnant women in Indonesia. The instrument was developed based on four core dimensions of spirituality: patience, gratitude, acceptance, and the capacity for wisdom (Wahyuni *et al.*, 2019; Wahyuni, Istikhomah and Murwati, 2023). A readability test was also conducted before the detailed discussion on these spiritual dimensions.

The Readability Test

The instrument demonstrated strong readability with an average completion time of 12 minutes, indicating high

cognitive accessibility and textual clarity. This finding aligns with recommended standards for healthcare questionnaires, which suggest a readability score of 2.5–3.0 and a completion time of 10–15 minutes (Poudel *et al.*, 2024).

According to previous studies, pregnancy may affect verbal memory and attention, underscoring the importance of cognitively accessible resources in this context (Younis *et al.*, 2025). The findings also support the instrument's suitability for pregnant women in Indonesia, a population with diverse literacy levels, and highlight its potential for broader use in maternal health settings, especially in community-based and antenatal care programs.

Patience

The valid items within this dimension reflect both individual moral resilience and broader socio-religious values that shape maternal well-being in Indonesia. Patience in this context is understood as a pregnant woman's ability to endure discomfort while surrendering to God with a calm heart (Wahyuni, Istikhomah and Murwati, 2023).

In Indonesian society, where religion is deeply integrated into daily life, such values form a shared moral ecology that supports healthy maternal behaviors. Consequently, cultural practices, including dietary restrictions and behavioral taboos, remain prevalent among Javanese women and other traditional communities, such as the Dayak, Baduy, and Kampung Pulau Seberang (Kartini and Kusumadewi, 2022; Arwiyantarsari *et al.*, 2024). A study identified a significant inverse relationship between maternal forgiveness and levels of both state and trait anxiety (Dehestani *et al.*, 2019), indicating that pregnant women with higher forgiveness capacity tended to experience lower anxiety. These findings highlight the significance of culturally aware maternal health interventions that incorporate spiritual elements and align with the women's lived experiences.

However, some invalid items failed to capture the construct effectively, as they emphasized universal emotional or interpersonal needs rather than specific markers of spiritual endurance. This result reflects a psychosocial pattern in which familial closeness is seen as normative and essential for maternal mental health. However, it does not necessarily indicate personal patience or religious self-regulation. The limited variation in responses to such items highlights Indonesian culture's collectivist orientation and suggests that better tools are needed to distinguish between relational support and personal spiritual virtues when assessing maternal resilience.

Gratitude

The identification of 11 validated items for the spiritual dimension reflects a holistic, culturally grounded understanding of maternal spirituality among pregnant women in Indonesia. Spirituality during pregnancy is not merely an abstract belief but a practice interwoven into daily routines. Spirituality is intertwined with psychosocial experiences and shaped by religious and cultural norms. Expressions of gratitude, such as refraining from complaints and feeling joy while performing good deeds, illustrate a form of spiritual appreciation (Wahyuni, Istikhomah and Murwati, 2023). Moreover, the desire to bring happiness to the family and fulfill maternal responsibilities highlights a collectivist orientation, linking maternal well-being to family harmony and social roles. Praying for the unborn child and engaging in religious rituals also indicate the internalization of faith-based coping strategies.

These findings are consistent with prior studies showing

common spiritual practices among pregnant women, including home worship (Trisiani *et al.*, 2024), food taboos, and spiritual rituals (Harahap, 2018; Ashriady *et al.*, 2022). Such practices serve dual functions: supporting emotional regulation and expressing spiritual agency. Earlier studies have demonstrated that support during childbirth plays a critical role in delivering high-quality care that reflects and respects the cultural values and belief systems of diverse communities (Ndraha, Purwarini and Anggraeni, 2024). Therefore, religion plays a central role in managing the psychological challenges of pregnancy. The need for culturally and spiritually sensitive prenatal care to support maternal mental health and strengthen family support networks is highlighted by these insights, which have significant implications for maternal health interventions.

Pleasure

The validated statements in this dimension capture aspects of spiritual well-being among pregnant women in Indonesia, characterized by reflective practices, appreciation of beauty, and emotional presence. These practices contribute to emotional stability and mental readiness during pregnancy. Prior studies report that pregnant women benefit spiritually through increased inner peace, mental strength, and self-confidence, often reinforcing faith and surrender to God as integral to their spiritual journey (Widodo, Winarni and ..., 2018; Trisiani *et al.*, 2024). Spiritual interventions, such as the Islamic Sleep Ritual Activity (ISRA), have been shown to improve both physical and psychological comfort in the third trimester (Zainiyah, Z; Hapsari, VD; Fitriah; Hasinuddin, 2025). Moreover, frequent family dialogue and perceived care foster a supportive psychosocial environment that strengthens spiritual and emotional preparedness. Reduced stress during pregnancy and improved maternal mental health are also linked to mindfulness and inner peace (Sun *et al.*, 2023).

These findings align with previous research indicating that spiritual perspectives; such as believing in divine destiny, demonstrating acceptance and sincerity in facing illness, and experiencing a sense of security through trust in God's will; play a significant role in facilitating family members' acceptance of a patient's illness (Agnes, Songwathana and Perngmark, 2022). These results highlight the multifaceted nature of spiritual well-being in Indonesia, encompassing social connectedness, emotional resilience, and religious practice. Understanding these aspects is crucial for creating culturally relevant prenatal care plans that integrate spiritual and psychosocial support, ultimately enhancing maternal psychological outcomes and aligning care with women's values and lived experiences.

Ability to Derive Wisdom

The findings emphasize that social and spiritual support are essential for the well-being of pregnant women, highlighting the importance of family involvement in decision-making and addressing key concerns before childbirth. Research indicates that spiritual support from family can significantly reduce maternal anxiety (Putri, M; Delima, AAA; Fitriani, R; Hartoko, 2023). Culturally embedded practices, such as *ngupati*, *mitoni*, and food taboos, contribute to maternal happiness when bolstered by family attention (Murniasih, Masfiah and Hatiyadi, 2016).

Furthermore, comparative research in Indonesia (Litaqia *et al.*, 2025) demonstrates that strong family and community support helps pregnant women maintain their mental and emotional health. Past studies have also discovered that spiritual well-being is positively correlated with life satisfaction

during pregnancy, with social support serving as a crucial mediator (Masoumeh *et al.*, 2019). These findings highlight the need to integrate spiritual and social support to enhance maternal well-being.

Thus, a comprehensive approach to prenatal care is vital, particularly in communities with profound spiritual beliefs. However, two items were deemed invalid: selecting a baby's name and physical/mental preparation for childbirth. These items may be invalid because practical tasks are culturally scheduled for after birth and are perceived as less emotionally or spiritually significant. Traditional naming rituals, often performed after the umbilical cord detaches, include symbolic ceremonies, such as the offering of red and white porridge (Dhiyaul Auliyah and Arief Sudrajat, 2022), reflecting the culturally sequenced responsibilities of motherhood.

Having a spiritual tool to assess pregnant women's spiritual needs is crucial for providing holistic maternity care. A valid and reliable instrument is essential for monitoring spiritual well-being throughout each trimester, enabling maternal health care providers to incorporate spiritual aspects into maternity care. Given that spiritual needs and adaptations vary across trimesters, integrating spirituality into maternal care can improve the overall well-being of pregnant women. Nevertheless, this study has several limitations. The sample size was relatively small, and the distribution of respondent characteristics was limited. Additionally, all respondents were from a single region, which may have influenced the validity of the test results. Future research could apply the instrument to a broader range of respondents, such as those from various regions of Indonesia, to better reflect the spiritual needs of pregnant women from diverse traditional and cultural backgrounds.

CONCLUSION AND RECOMMENDATION

The spiritual assessment instrument for pregnant women has demonstrated both validity and reliability in measuring their spiritual needs. Maternal health care providers can use this instrument to identify the spiritual needs of pregnant women in each trimester and include spiritual aspects into maternity care to facilitate different spiritual adaptations experienced by pregnant women at different stages of pregnancy.

The instrument may be incorporated into clinical practice guidelines to enable the systematic assessment of spiritual needs during prenatal care and improve the quality of maternal care. The integration of this tool should be accompanied by structured training programs for healthcare providers to ensure its effective and consistent application. Additionally, instruments that measure spiritual needs must be periodically tested, as a person's spiritual needs can change over time and across situations. Periodic testing is also important because the instrument needs to remain valid and reliable to provide accurate measurements. Therefore, there is a need for longitudinal studies to validate the instrument in response to changes in behavior, physical development, or attitudes among pregnant women.

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