

ORIGINAL ARTICLE

The Effect of Spiritual Self-care Intervention with a Blended Learning Approach on Anxiety in Women with Preterm Labor: A Randomized Controlled Trial

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ABSTRACT

Background: One way of dealing with pregnancy-related anxiety is through women's beliefs. This study aimed to assess the effect of spiritual self-care blended learning on anxiety in women with preterm labor.

Methods: A non-blinded and parallel randomized clinical trial was conducted in Kashan, Iran, from April to November 2018. In this study, 70 pregnant women with preterm labor were randomized to intervention and control groups (35 each) by flipping a coin. For the intervention group, spiritual self-care training was delivered through two face-to-face sessions and three offline sessions. The control group received routine mental healthcare. The data were collected using socio-demographic information and the Persian Short Form of the Pregnancy-Related Anxiety (PRA) Questionnaires. Participants filled out the questionnaires at baseline, immediately after the intervention, and four weeks after it. Chi-square, Fisher's exact test, independent t-tests, and repeated measures ANOVA were used to analyze the data. SPSS v.22 was used, with a significance level of $P < 0.05$.

Results: At baseline, the mean PRA scores in the intervention and control groups were 52.25 ± 29.23 and 49.68 ± 21.66 , respectively ($P = 0.67$). There were significant differences immediately after the intervention (28.02 ± 12.13 and 51.42 ± 20.99 in the intervention and control groups, respectively) ($P < 0.001$), and four weeks post-intervention (25.45 ± 10.44 and 52.17 ± 21.13 in the intervention and control groups, respectively) ($P < 0.001$); PRA was lower in the intervention group.

Conclusion: Our results revealed the positive effect of spiritual self-care intervention on anxiety in women with preterm labor, so this intervention could be integrated into prenatal care.

Trial Registration Number: IRCT20160808029255N2

Keywords: High-risk pregnancy, Qualitative research, Prenatal care, Perspective

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INTRODUCTION

Pregnancy and childbirth are one of the most important events in life. During this time, women simultaneously experience complex emotions (such as happiness and fear).¹ Anxiety, as one of these emotions, is a common problem in pregnant women.² As her due date approaches, a pregnant woman is more likely to express anxiety and fear about the labor and delivery process. Variable anxiety indexes in pregnancy have been reported in international research, with 23 percent in a study done in Canada, 15.6 percent in Germany, and 49 percent in Pakistan. A study in Iran showed that 42.6% of pregnant mothers had manifest anxiety, and 45.3% had hidden or above-average anxiety.³⁻⁷

One systematic review and meta-analysis study investigated the link of anxiety and pregnancy complications, such as the birth of premature infants, and this association was confirmed.⁸ True labor contractions before the 37th gestational week are called preterm labor. Annually 15 million babies are born preterm worldwide, with a global preterm birth rate of about 11%. The burden of preterm birth is particularly high in low- and middle-income countries.⁹

There are no active treatments for anxiety in pregnancy.⁸ Antidepressants are the first line of treatment, but medications to manage anxiety have been associated with potential side effects.^{10, 11} A recent review showed that non-pharmacological treatment for anxiety is highly acceptable among pregnant women. They classified these interventions as psychological, mind-body, educational, and supportive interventions.¹²

One of the non-pharmacological interventions is spiritual care. Spirituality involves recognizing one's own goals in life and the meaning of life. These conceptualizations are not always related to religious beliefs. The aim of spiritual care is to assist in their search for meaning and purpose in life.¹³ Moreover, it is suggested that concentrating on spirituality is an important factor in enhancing maternal and fetal health

and that religious teachings are the most important factors in the spiritual health of pregnant women.¹⁴ Currently, spiritual care has been accepted as an important aspect of activities offered by healthcare providers in the USA.¹⁵ Given Iran's socio-cultural and religious background, it is an appropriate interventional technique.¹⁶

Attention to the religious perspectives, as a part of spirituality care during the prenatal period, is a good strategy to promote maternal mental health. Research on Muslim Indonesian pregnant women was undertaken with an emphasis on the primary issues of surrendering to God, making pregnancy and childbirth easier for moms, and generating meaning via spiritual stories. During pregnancy and childbirth, having trust in God and his support enhances one's self-confidence, motivation, and endurance; remembering God is a way of controlling oneself, overcoming anxiety, and labor pain; having faith in God and his help improves one's self-confidence. Spirituality had a significant impact on Muslim Indonesian women's conduct towards prenatal care when they communicated with God.¹⁷

Spiritual teachings can have behavioral, cognitive, emotional, and ethical aspects and manifest in religious concepts such as trust, patience, prayer, and supplication.¹⁴ By giving meaning and concept to life and a sense of belonging to God, the spiritual experience can help one cope better with one's stressful situations in life and take steps towards betterment.¹⁵

Blended learning involves the intellectual integration of virtual and face-to-face learning. Potential for blended learning is a combination of teaching methods that employ two or more approaches that complement each other but provide the same teaching materials.¹⁸ Virtual learning alone may not be adequately effective for all its target audience as they come from different intellectual and professional backgrounds. The purpose of blended learning is to provide learners with opportunity to better utilize both virtual

and face-to-face learning.¹⁹ As a result, the research team aimed to implement spiritual education through a combination of virtual and face-to-face learning that have the strength of both virtual and face-to-face learning, and it solves the weaknesses of virtual intervention alone.

Nowadays, despite the high coverage of prenatal care, it seems that the main focus is on the physical aspects of care and medical measures. Midwives who provide holistic care seek to perceive the pregnant woman holistically, pay attention to her physical and spiritual characteristics.²⁰ Along with holistic care, compassionate spiritual care has come to the fore and is increasingly accepted as part of quality health care.^{21,22} According to literature, spiritual intervention has been effective in improving sleep disorders, stress, anxiety, and depression in pregnancy, but none of the studies focused on preterm pregnancies.²³⁻²⁵ Therefore, the present study was conducted to investigate the effect of spiritual self-care blended learning on anxiety in women with preterm labor.

MATERIALS AND METHODS

A non-blinded parallel controlled randomized clinical trial was conducted on 70 women with preterm labor in their 30th-34th gestational weeks during April to November 2018. The research setting was the obstetrics ward of Shahid Beheshti Hospital (SBH) affiliated with Kashan University of Medical Sciences. The research population consisted of all the women attending the SBH with preterm labor and hospitalization.

For determining the sample size at a confidence interval of 95%, a power of 80%, and presuming that the effect of the training on the intervention group's anxiety would be 15 (determined by expert opinion) compared to the control group to be statistically significant, 30 subjects was estimated for each group, which was increased to 35 given the possibility of sample loss. These standard deviations were taken from Babanazari's study ($SD_1=20$, $SD_2=22$).²⁶

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2 \times (\sigma_1^2 + \sigma_2^2)}{d^2} = \frac{(1.96 + 0.84)^2 \times (20^2 + 22^2)}{15^2} = 30.80$$

Convenience sampling was done, and 143 pregnant women who referred to Kashan's SBH were enrolled in the study. The researcher introduced herself to the research units (pregnant women possessing the inclusion criteria) and described the research objectives. Informed written consent was then taken from the samples if they were willing to participate in the study. Overall, 70 pregnant women were considered eligible using flipping a coin as the most common method of simple randomization and enrolled in the intervention and control groups.

The inclusion criteria were age over 18 years, at least a high school diploma (For the ability to use a smartphone), possession of a smartphone, primigravida, gestational age: 30th-34th week (because we needed time to do the intervention and follow-up), lack of consumption of psychotropic and thyroid medications during the past six months (because of the effect of these conditions on anxiety), and lack of a history of diagnosed anxiety disorders (according to the medical record). The exclusion criteria were absence in more than one session (for the intervention group), preterm delivery during the intervention, reluctance of the research units to cooperate, and previous participation in religious ceremonies or gatherings during the past six months. As in Iran, an Islamic country, spirituality is often associated with religious ceremonies, we designed this intervention based on this assumption. In addition, we conducted our study in Kashan, an Iranian city with a strong religious background. Most people living in Kashan exhibit religious behaviors and participate in religious ceremonies/gatherings. Since our interventional content was mainly religious, participation in those programs could have a confounding effect on the results of our study. Eventually, of the 143

enrolled pregnant women, 73 were excluded; 52 declined to participate in the study, and 21 were excluded from the study because they had participated in religious ceremonies frequently in the previous six months. Those selected were assigned to the intervention and control groups through simple randomization. After assigning the subjects to the two groups, we took some measures to minimize contact between the two groups by attending the classes and completing the questionnaires at different times (Figure 1).

Blended virtual and face-to-face training was applied in the intervention group. First, two 90-minute face-to-face classes were held in hospital for teaching spiritual self-care based on Kajbaf et al.'s educational package (2013) by the researcher.²⁷ In this intervention, we made an attempt to design an intervention using Kajbaf's package to apply the aspects mentioned earlier of religious beliefs. Beliefs are the foundation of attitude change, and, in turn, behavior change and treatments become more effective following behavioral change. Among these beliefs is belief in God's forgiveness, the importance of prayer and its

effect in life, the significance of charity and forgiveness, and love in life, all of which have been dealt with in the interventional content. Validation of the intervention content was done by a panel of experts including a gynecologist, a reproductive health specialist, and a psychologist.

These two sessions were held five days apart (the beginning and end of the week) in the hospital. Group education was employed, and the researcher used lectures and questions and answers. The tools used included whiteboards, markers, and a brochure. After the participants were discharged from the hospital, the next three sessions were held virtually and offline (each five days apart), and the contents were delivered to the participants in the form of text, movie clips, and photos via Telegram messenger and text messages. The control group received routine mental health care according to the national safe motherhood guideline. Follow-up was done by calling and text messaging the participants individually to ensure they had received and studied the educational material. Thus, the five sessions were held over three weeks. Two presumptions

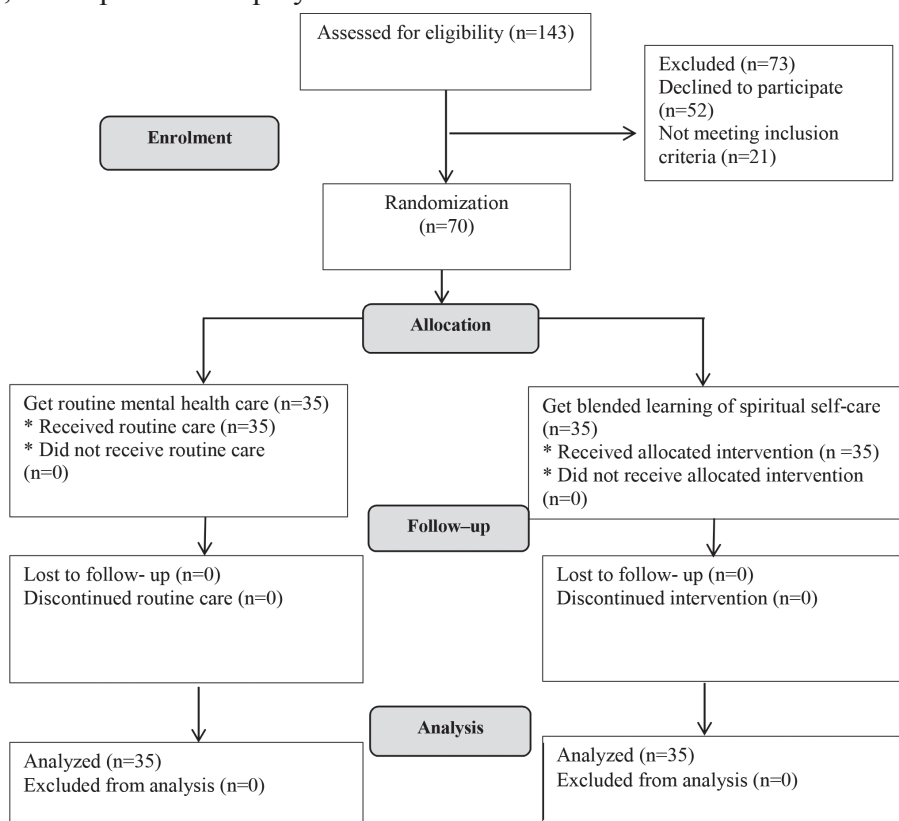


Figure 1: CONSORT flowchart of the study participants.

were considered while developing the content of the intervention, the spiritual person, and the factors causing PRA. It was designed in five sessions in the form described in Table 1. Each participant received a pamphlet and a summary of the content provided at the end of each session. It was requested not to share the received content with anyone until the end of the study, and it was assured that after the end of the study, the educational content would be provided to both control and intervention groups.

Data were collected by completing a questionnaire consisting of three sections: 1) personal characteristics (age, spouse's age, education, spouse's education, occupation, spouse's occupation, religion, marital satisfaction), 2) pregnancy-related information (wanted or unwanted pregnancy, gestational age, days in hospital), and 3) evaluation of PRA. In the present study, PRA was

considered as the primary outcome. PRA is a Dutch questionnaire that evaluates pregnancy-related fears and worries. PRAQ was constructed by Van Der Bergh in 1990.²⁸ The short-form PRAQ with 17 items (PRAQ-17) also designed by Van den Bergh was used to evaluate the PRA. Exploratory factor analysis of the questionnaire data yields five factors: fear of delivery (3 items, 3–21 scores); fear of giving birth to a physically or mentally disabled child (4 items, 4–28 scores); fear of changes in marital relations (4 items, 4–28 scores); fear of mood swings and their outcomes on the child (3 items, 3–21 scores); and self-centered fears or fear of changes in the mother's personal life (3 items, 3–21 scores). The final score of the questionnaire is obtained by summing up the scores of each item. Each item is scored from 1 to 7, so the PRAQ-17 scores can range between 17 and 119.²⁸ Askarizadeh et

Table 1: Educational topics of the sessions for spiritual self-care intervention

Sessions	Presumption of the spiritual person	Content related to pregnancy related anxiety
First (face-to-face)	1. The truth about salvation 2. Pleasant and unpleasant feelings are dependent upon internal feelings and attitudes	<ul style="list-style-type: none"> ● Focus on 'fear of preterm delivery' ● Hope and togetherness were discussed, and then the participants' worries were classified into groups. Furthermore, improving one's intentions and targeting behaviors and positive mental imagery of the universe and God were also taught.
Second (face-to-face)	3. The principle of action: this principle is based on God's attributes of mercy and forgiveness 4. The divisibility of affairs: meaning, worldly affairs can be divided into changeable and unchangeable affairs	<ul style="list-style-type: none"> ● Focus on 'fear of giving birth to a physically or mentally disabled child' ● The position of the order in the universe and the practicing order in life were taught.
Third (Virtual)	5. The world has been created ethically and is always moving towards happiness 6. The future is not under our full control	<ul style="list-style-type: none"> ● Focus on 'fear of mood swings and their outcomes on the child' ● The strategies of prayer, trust, and hope in God and their place in one's ascension and confrontation of anxiety were discussed.
Fourth (virtual)	7. Man is constantly in contact with God 8. The spiritual person lives with her attributes, not her material and worldly assets	<ul style="list-style-type: none"> ● Focus on 'fear of changes brought about in sexual and marital life' ● The role and position of patience as a strategy to improve marital quality of life and deal with the anxiety were discussed.
Fifth (virtual)	9. Reaching a spiritual life requires the spirit of charity, forgiveness, mercy, and love. 10. Understanding the meaning of hardships and accountability towards God, self, others, and the universe	<ul style="list-style-type: none"> ● Focus on 'self-centered fears or fears of change in the mother's personal life' ● All the ten presumptions of the spiritual person were revised in this session.

al. assessed the psychometric properties of the Persian version of the PRAQ17 in 2017.²⁹ They found that the face and content validities of the questionnaire were approved in the Persian language as well as all domains in confirmatory factor analysis. Reliability of the Persian version of the PRAQ17 has been approved with a Cronbach’s alpha of .078, and for the fear of delivery 0.76, fear of giving birth to a physically or mentally disabled child 0.74, fear of changes in marital relations 0.70, fear of mood swings and their outcomes on the child 0.70, and self-centered fears or fear of changes in the mother’s personal life 0.69.²⁹ In the present study, we estimated the Cronbach’s alpha for PRAQ-17 as 0.86 and value of 0.72–0.81 for the five factors.

The data were analyzed using descriptive and analytical statistics. We used parametric tests for the study based on the results of the

Kolmogorov-Smirnov test and the normality of the data distribution. We used the mean (standard deviation) and median to describe quantitative factors, and the frequency report to explain quality factors (percentage). The mean score of the anxiety variable in the two groups was compared using an independent t-test. Furthermore, each group’s anxiety score was compared before and after the intervention using repeated measures analysis of variance. SPSS version 22 was used to analyze the data, and a P value of less than 0.05 was considered statistically significant.

This study was approved by the ethics committee of Tehran University of Medical Sciences, with the code of IR.TUMS.FNM.REC.1396.4274 code. All the participants were informed of the study objectives and written informed consent was obtained. In addition, the right to withdraw from the study

Table 2: Demographic characteristics and pregnancy-related information of the samples

Quantitative variables		Intervention (N=35)	Control (N=35)	P value
		Mean±SD	Mean±SD	
Age (years)		24.31±4.29	25.34±4.76	0.34*
Spouse’s age (years)		28.51±4.62	28.98±4.20	0.65*
Gestational age(week)		32.25±1.50	32.54±1.44	0.42*
Days in hospital		3.74±0.88	3.63±0.87	0.58*
		N (%)	N (%)	
Education	High school	26 (74.30)	19 (54.20)	0.07**
	Bachelor	7 (20)	14 (40)	
	Master	2 (5.70)	1 (2.90)	
	PhD	0 (00)	1 (2.90)	
Spouse’s Education	High school	22 (62.90)	17 (48.60)	0.74**
	Bachelor	11 (31.40)	15 (42.80)	
	Master	2 (5.70)	2 (5.70)	
	PhD	0 (00)	1 (2.90)	
Occupation	Housekeeper	26 (74.30)	30 (85.70)	0.26**
	Employed	6 (17.10)	5 (14.30)	
	Self-employed	3 (8.60)	0 (00)	
Spouse’s occupation	Unemployed	1 (2.90)	1 (2.90)	0.87**
	worker	10 (28.60)	8 (22.90)	
	Employee	9 (25.70)	12 (34.30)	
	Freelancer	15 (42.90)	14 (40.00)	
Religion	Shia	30 (85.70)	34 (97.10)	0.19**
	Sunni	5 (14.30)	1 (2.90)	
Marital Satisfaction	Low	1 (2.90)	0 (00)	0.15**
	Moderate	10 (28.60)	5 (14.30)	
	high	24 (68.60)	30 (85.70)	
Wanted pregnancy	Yes	12 (34.30)	11 (31.40)	0.79***
	No	23 (65.70)	24 (68.60)	

*Independent t-test, ** Fisher’s exact test, *** Chi-square test

was considered for the participants without any change in their treatment process.

RESULTS

In this study, the data related to 70 pregnant women with preterm labor were examined.

The statistical test showed that the two groups were not statistically different in terms of the variables under study and were homogenous. Details of the demographic characteristics of the pregnant women are reported in Table 2.

At baseline, the mean PRA scores in the intervention and control groups were 52.25 ± 29.23 and 49.68 ± 21.66 , respectively. Independent t-test results indicated no statistically significant difference between the two groups regarding the overall PRA score and its domains at the baseline ($P=0.67$) (Table 3).

Results indicated that there were significant differences immediately after the intervention (28.02 ± 12.13 and 51.42 ± 20.99 in the intervention and control groups, respectively) ($P < 0.001$), and four weeks post-intervention (25.45 ± 10.44 and 52.17 ± 21.13 in the intervention and control groups, respectively) ($P < 0.001$); PRA was lower in the intervention. Since the interaction between group (intervention and control) and time (baseline, immediately after the intervention, and week 4 by using repeated measures ANOVA was significant ($P < 0.001$), the PRA and all its related domains were compared over time between groups; compared to the control group, the anxiety score was lower in the intervention group (Cohen's $d=1.6$). The mean \pm standard deviation of PRA scores and its domains along with their changes immediately after the intervention and 4 weeks after the intervention in the intervention and control groups are presented in Table 3.

DISCUSSION

Results of this study showed the positive impact of blended learning of spiritual self-care on anxiety in women with preterm labor. After

the training, the results revealed statistically significant variations in PRA and its domains between the intervention and control groups. Moreover, the intra-group changes revealed that PRA in the intervention group reduced dramatically compared to baseline immediately after the intervention and four weeks after it, while it increased significantly in the control group. To explain the results of this research, we may say that teaching the presumptions of spiritual therapy –such as the first and second presumptions, i.e., the truth about salvation and the significance of having a positive outlook and improving one's intentions towards problems, as well as the holiness of becoming a mother from the Islamic perspective, can make the mothers' mental assessment of pregnancy more positive. These, in turn, can lessen PRA, which is manifested in the main tenets of our research tool, including fear of delivery, fear of giving birth to a physically or mentally disabled baby, fear of change in marital relations, fear of mood swings, and their outcomes on the baby, and fear of changes in one's personal life. Religious people always see God as their companion and trust in Him, which raises their hope towards the future and can reduce a mother's fears of giving birth to a disabled child and thus lessen one's anxiety. Another explanation is that by teaching the seventh presumption, i.e., continual connection with God and the importance of patience and its place in life, and the ninth presumption, i.e., the significance of charity and forgiveness and their places in life, individuals learn to persevere in the face of life's difficulties and challenges and sometimes easily overlook problems, all of which eventually lead to lower anxiety levels. A study on Muslim Indonesian women describing their perspectives of the spiritual experience during pregnancy and childbirth yielded similar results. This study showed that spirituality greatly affected Muslim Indonesian women's behavior towards prenatal care and that midwives should be sensitive to mothers' spirituality and integrate this element in to it.¹⁷ Although the objective of this study is different from ours, the effect of spirituality with religious perspective in both similar study settings in the prenatal period is important.

Table 3: Comparison of pregnancy-related anxiety between and within the intervention and control groups

Variable	Groups	Mean±SD			P-value **	Time		Group		Time×Group	
		T1 ^a	T2 ^b	T3 ^c		F	P value**	F	P value**	F	P value**
Fear of childbirth	Intervention	12.97±6.90	6.42±3.25	5.34±2.31	<0.001	41.92	<0.001	30.34	<0.001	59.64	<0.001
	Control	13.77±5.79	14.60±4.76	14.28±5.21	0.03						
	P value*	0.60	<0.001	<0.001							
	Cohen's d	-	d=2.01	d=2.21							
Fear of having a child with a physical or mental disability	Intervention	12.85±8.67	6.45±3.68	6.05±3.28	<0.001	26.46	<0.001	5.02	0.02	29.12	<0.001
	Control	11.77±8.05	11.91±7.57	11.94±7.67	0.71						
	P value	0.58	<0.001	<0.001							
	Cohen's d	-	d=0.91	d=0.99							
Fear of change in marital relationships	Intervention	10.34±6.88	5.80±2.63	5.45±2.26	<0.001	16.35	<0.001	2.96	0.09	29.22	<0.001
	Control	8.42±4.53	9.00±4.61	9.20±4.62	0.03						
	P value	0.17	<0.001	<0.001							
	Cohen's d	-	d=0.08	d=1.03							
Fear of changes in mood and its consequences on the child	Intervention	7.17±4.37	4.40±1.97	4.11±1.60	<0.001	14.49	<0.001	7.68	0.007	23.16	<0.001
	Control	7.42±4.68	7.51±4.45	7.97±4.78	0.06						
	P value	0.81	<0.001	<0.001							
	Cohen's d	-	d=0.90	d=1.08							
Self-centered fears or fears of changes in the mother's personal life	Intervention	8.91±6.07	4.94±2.70	4.48±2.22	<0.001	21.04	<0.001	6.49	0.01	28.72	<0.001
	Control	8.28±4.38	8.40±4.47	8.77±4.40	0.01						
	P value	0.62	<0.001	<0.001							
	Cohen's d	-	d=0.93	d=1.23							
Total pregnancy-related anxiety score	Intervention	52.25±29.23	28.02±12.13	25.45±10.44	<0.001	32.90	<0.001	12.69	0.001	46.15	<0.001
	Control	49.68±21.66	51.42±20.99	52.17±21.13	0.002						
	P value	0.67	<0.001	<0.001							
	Cohen's d	-	d=1.36	d=1.6							

a: Before the intervention; b: Immediately after the intervention; c: Four weeks after the intervention; *Independent t-test, **Repeated measures ANOVA

A study aimed to determine the effectiveness of teaching spiritual intelligence on psychological well-being, marital satisfaction, and PRA in primigravidae and observed that spiritual intelligence was indeed one of the factors that could effectively reduce negative emotions—including PRA.²⁶ Another study showed spirituality had an inverse relationship with anxiety and depression in pregnant women and that spirituality was a significant predictor of anxiety; spirituality can play a protective role against psychological worries and problems.³⁰

Another study found that spiritual counselling could help pregnant women cope with depression, anxiety, and stress, and that it could be utilized as a complementary, effective, and noninvasive strategy to manage their psychological disorders. Their research found that there was a significant difference in the intervention and control groups' depression, anxiety, and stress levels immediately after the intervention and two months after it. Although their intervention had been conducted in the form of face-to-face group sessions, their results were consistent with ours.³¹

Greater spirituality adjusts more easily to the physiological signs of pregnancy and experiences less anxiety. Spiritual affairs affect the individual's intellectual processes and one's assessment of life's daily events. Thus, even apparently negative events are assessed as positive and meaningful, and the person feels positive about them. People with greater spirituality can endure less harm in the face of daily anxiety and pressurizing events through the following resources: the feeling of being attached to a Supreme being, being hopeful toward receiving help from spiritual resources during life's difficult times, having social support and spiritual support.³² People with spiritual tendencies, when confronted with stress and harm, respond better to their situation, better manage the pressure-causing circumstance, and are healthier.³³

The Strengths of this study is that the effect of spiritual therapy on the anxiety of pregnant women with preterm labor has not

been studied so far, and the use of the blended learning method of face-to-face and virtual was one of the innovations of this study. One of the limitations of this study was that those mothers who entered the study at 34 gestational weeks would have their last assessment at the 41st week, and some of these mothers gave birth before this time. Thus, those mothers who delivered their babies before the 4th post-intervention week were assessed at the time of their delivery. The number of participants who entered the study at 34 weeks GA was 23 (13 and 10 in the control and intervention groups, respectively). Of these, 7 and 6 from the control and intervention groups, respectively, gave birth before their 41st week. The mothers who attended the hospital three weeks after their prior assessment were assessed at the time of delivery. This limitation was out of the research team's control. Moreover, this study was conducted only on women with preterm labor; thus, the research results may not be generalized to the entire population of pregnant women. Finally, due to the nature of the intervention, it would not be possible to blind the participants.

CONCLUSION

Given the positive effect of blended learning of spiritual self-care on reducing anxiety during pregnancy and the side-effects of drugs in doing so, midwives and other health caregivers providing antenatal care can integrate the spiritual self-care program into their care as a non-meditational intervention. We recommend conducting more extensive research in which other groups of pregnant women can also be included, and other demographic factors affecting health may also be taken into account to throw light on different dimensions of spiritual self-care on PRA. Furthermore, since there is a lack of study on combined interventions in this field, we recommend undertaking other interventions that employ this method and also comparing the results of combined virtual – face-to-face education with other combined educational techniques

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