Introduction

Anxiety is one of the most prevalent symptoms in pregnancy and has the largest share in labor. Increasing evidence has indicated the negative effects of maternal stress on the fetus. These effects include spontaneous abortion, low fetal weight, elevated levels of stress hormones, chronic increase in blood pressure, premature birth and infant mortality, change in endocrine secretion, change in hypothalamic-pituitary axis performance, immune system suppression, and changes in the number of lymphocytes and decrease in CD4/CD8 cells. The role of prenatal stress in the etiology of childhood illnesses and adulthood disorders and maternal postpartum depression is taken into consideration. However, pregnancy and the puerperium can be stressful enough to trigger mental disorders which may reflect the recurrence or exacerbation of ex-psychiatric disorders (preexisting) or may implicate the onset of a new disorder. Chemical factors (including hormones of progesterone-estrogen-cortisol-thyroid hormones) and life

ABSTRACT

Background: Anxiety is among the most common pregnancy complications. This study was conducted to examine the impact of religious teaching on anxiety in primiparous mothers referring to the selected perinatal clinics of Tehran University of Medical Sciences in 2013. Materials and Methods: This randomized clinical trial was conducted on the pregnant women in 20–28 weeks of gestation referring to the selected clinics of Tehran University of Medical Sciences from July 2013 to June 2014. The subjects were selected through simple random sampling and divided into religious education and control groups. To assess the individuals, a demographic questionnaire, an anxiety trait State-Trait Anxiety Inventory and a religious knowledge and attitude trait (pre-test and post-test and 1 or 2 months after the test) were filled in by the two groups. Training classes (religious knowledge and attitude trait) for the cases were held in 6 weeks, and the sessions lasted for 1½ h. Results: The knowledge and attitude scores showed significant differences in the controls and cases after the intervention (P = 0.001) and 2 months after the study (P = 0.001). According to the results of independent t-test, a significant difference was found in the state anxiety score (P = 0.002) and personal score (P = 0.0197) between the two groups before the intervention; however, the results were strongly significant different after the intervention and 2 months after the study (P ≤ 0.001). Conclusions: The improvement in the mothers’ knowledge and attitude in religious subjects will reduce anxiety in primiparas.

Keywords: Anxiety, attitude, knowledge, religious

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stressedors can have a significant impact on mental health. Hence, logically it seems that pregnancy is supposed to have an impact on the number of concurrent psychiatric disorders. Women in a variety of ways respond to the environmental stressedors and ongoing concerns about fetus health, child care, lifestyle changes, or fear of labor pain. In a study, negative effects of high antenatal maternal anxiety related to impulsivity during a performance on cognitive tasks in 14 and 15 years old subjects were mentioned. The results of Austin et al’s study has shown that maternal trait anxiety, depression, and life event stress during pregnancy are associated with the incidence of complications in infant temperament at 6–4 months after birth. Furthermore, the results of Robertson’s study on 14,000 samples have shown that antenatal depression, anxiety, and life event stress in pregnancy can develop postpartum depression.

In this respect, religion is supportive for people encountered with problems, and religious beliefs and activities such as prayer, worship, trust and appeal to God are defined as religious resources to increase tolerance. Moreover, religious practices such as prayer, honesty and faith and also study of religious books in developing hope, encouragement and positive attitudes toward depressive conditions and helping the one to get out of the depressive crisis would create a kind of inner peace.

Some studies have shown that intrinsic religious orientation is among the organized psychological behavior of great importance in the treatment of diseases and plays basic roles in the treatment of pain, anxiety, depression, and stressedors.

Since the late 20th century, the studies have revealed the effects of religious interventions for improving psychological suffering. Furthermore, the effects of praying and reciting to control the psychological disorders are considerable. Studies not only show the positive relationship between religion and mental health but also reflect the influence of religion on health status.

The current study has been designed to investigate the religious teaching impact on the religious knowledge and attitudes of primiparous women referring to the selected prenatal clinics of Tehran University of Medical Sciences in July 2013 up June 2014. This study aimed at reducing antenatal maternal anxiety with religious education and use and improving mental health in pregnant women in pregnancy and postpartum periods.

Materials and Methods

Setting and design

The present randomized clinical trial was conducted in the selected prenatal clinics of Tehran University of Medical Sciences in 2013. According to the statistical consultation, considering $\alpha = 0.05$, $\beta = 0.2$, $d = 2$, and power = 95%, and using the following formula, an 84-subject sample size (42 in each group) was determined for the study [Figure 1]:

![Figure 1: The study Research community protocol consort diagram](image-url)
Mokhtaryan, et al.: Religious education on primiparas’ anxiety levels

Knowledge assessment questionnaire was a researcher-made instrument including 41 items in 6 dimensions of pray, ethics and values, the effect of religion on life and behavior (praying and fasting), social issues, world view and beliefs, and science and religion. This questionnaire is scored through a Likert scale in such a way that scores of 4–5, 1–2, and 3 are given to the options with a positive attitude, options with a negative attitude, and those in between, respectively. The maximum score of this scale is equal to 205. Besides, scores >164, 82–164, and <82 represent high, average, and low religious knowledge, respectively. To determine the validity of the questionnaire, it was given to 10 expert professors of schools of nursing and midwifery of Shiraz and Tehran Universities of Medical Sciences. After application of the professors’ recommendations, the questionnaire’s validity was confirmed. To evaluate the questionnaire’s reliability, it was given to 30 pregnant women in a pilot study and its reliability was assessed. In doing so, Cronbach’s alpha coefficient was separately computed for different sections of the questionnaire revealing its internal consistency. In addition, the whole questionnaire’s reliability was confirmed by Cronbach’s alpha = 81%.

In the intervention group, instruction of religious doctrines was started from the 20th to 28th weeks of gestation. The educational classes were held through 6 weekly 60–90 min sessions. The first three sessions were conducted by the researcher, whereas the last three ones were managed by a clergyman. After the end of the classes, the educational content was practiced through role play and group discussion. The content of the educational classes was as follows: First session: Problems during the pregnancy period, importance of pregnancy period in Islamic culture, and recommendations for the pregnancy period (praying, dietary recommendations, and advices for after delivery), second session: Breastfeeding, breastfeeding in Quran, infant’s right for breastfeeding, and reward of breastfeeding, third session: Individual ethics (trust, sincerity, gratefulness), importance of mother’s characteristics such as good-temperedness, cheerfulness, kindness, modesty, forgiveness, and mental health in pregnancy, fourth session: Collective ethics, good-temperedness, and showing empathy with others, fifth session: Emotional feeling toward God including love of God, fear from God’s unhappiness, emotional feeling toward others, emotional feeling toward parents, positive emotion toward one-self, and positive emotion toward the world, and sixth session: Doing one’s religious duties, praying (individual praying, fasting), and importance of collective prayers.

Ethics

This research project was approved by the local Ethics Committee of Shiraz University of Medical Sciences and written informed consents were obtained from all the participants. The research proposal no was 92-01-86-6947 and it was financially supported by endocrine and metabolism research center, Shiraz University of Medical Sciences. The research in Iranian Registry of Clinical Trial was registered with registration number: IRCT: 2014030414041N3.
Statistical analysis

After all, the data were analyzed in SPSS statistical software (Version 16.0, Chicago, SPSS Inc); to evaluate the homogeneity of age (independent sample t-test), education and level of income, Chi-squared test was used. In addition to comparing the level of knowledge, attitude, and anxiety in the two groups, Independent Sample t-test were used.

Results

The results of the demographic data analysis in Table 1 show that the subjects in the cohorts of Intervention and control are homogeneous regarding demographic characteristics and some variables.

To evaluate the religious knowledge and attitudes in pregnant women, t-test results [Table 2] indicated that there was no difference in religious knowledge score between the intervention and control group subjects before the intervention \( P = 0.1 \); whereas there existed a significant difference between the intervention and control groups after the intervention and 2 months after the study (\( P = 0.001 \)). Independent t-test results, as shown in Table 3, indicated that there was no significant difference in the religious attitude score between the two groups of intervention and control before the intervention \( P = 0.9 \), while between the intervention and control groups after the intervention (\( P = 0.001 \)) and 2 months after the study there was a significant difference (\( P = 0.001 \)).

In evaluating the anxiety level in the intervention group after training, the state anxiety in severe anxiety declined from 7.1% to 2.4% while the moderate anxiety remained unchanged (40.5%) and the mild anxiety changed from 52.4% to 57.1%. Thus, a slight increase in the state anxiety suggested that the volume of severe anxiety was reduced in the intervention group. In the control group, severe anxiety increased from 9.5% before the intervention to 11.9% after the intervention and to 24.4% within 2 months after the intervention. Moderate state anxiety in the control group increased from 66.7% before the intervention to 64.3% after the intervention and to 71.4% within 2 months after the intervention. Mild anxiety individuals reduced in size due to allocation of more individuals in the moderate and severe anxiety groups.

The severe trait anxiety of individuals in the intervention group after religious education decreased from 7.1% to 0% and the reduction remained constant 2 months after completion of the intervention. However, the moderate trait anxiety of the individuals increased from 47.6% to 73.8% after the intervention and then remained fixed for up to 2 months after completion of the training. Moreover also, mild personality anxiety slightly increased from 19% to 29% after the intervention and the volume reduced to 10% 2 months after the intervention. Finally, the volume of more severe personality anxiety reduced in the intervention group.

Severe anxiety in the control group increased from 14.3% before the intervention to 16.7% after the intervention and to 23.8% within 2 months after the intervention. In the control group, moderate personality anxiety had increased from 59.5% before the intervention to 64.3% after the intervention and 73.8% after 2 months of completion of the intervention. Furthermore, the number of individuals in the mild trait anxiety reduced and this was due to allocation of more people in the moderate and severe anxiety group.

In evaluating the level of anxiety in pregnant women, the independent t-test results in Table 4 show that there was a significant difference in the state anxiety score in primigravida women between the intervention and control groups before the intervention, \( (P = 0.002) \); so, between the two cohorts of intervention and control after the intervention \( (P = 0.001) \) and 2 months after the intervention there was a significant difference.
(P = 0.001). The independent t-test results in Table 5 have shown that personality anxiety scores between the two cohorts have no difference preintervention (P = 0.0197) so, between the intervention and control cohorts after the intervention (P = 0.001) and 2 months later there existed a significant difference (P = 0.001).

### Discussion

Based on the obtained results in this study, religious education has led to an increase in religious knowledge and attitudes among pregnant women. Therefore, an increase in the knowledge and attitudes of pregnant women indicated the influence of religion on them. In the control group which had equal qualifications as the intervention group but instead of attending religious teachings was given only routine cares, no increase in the religious knowledge and attitudes was observed. The results indicated that by using religious education, the religious knowledge, and attitudes of participants in the training group in comparison with the controls went up and after 6 sessions of training, both state and trait anxiety have reduced. Severe state anxiety in the first trimester of pregnancy in the intervention cohort ceased, and the individual stages of anxiety were in the range of mild and moderate, whereas those in the control group in the third trimester of pregnancy had 21.4% of severe state anxiety and 23.8% of severe trait anxiety.

In a study on 4132 individuals aged 65 and older in Canada, who regularly worshiped and participated in the religious gatherings, it was demonstrated that they suffered less from depression while there was no relationship between depression and worship. The depression was obvious among those who only listened to the religious radio and watched religious TV[24] Involvement in religious rituals, social ties and social support from the religious gatherings may strengthen the beliefs and religious practices.[25] In another study, it was indicated that belief or faith in God or reading or reciting Bible and strong connection with the church could help the hospitalized medically ill patients.[26] Several groups of researchers by reviewing the studies have concluded that religious beliefs and religious practices have a positive impact on people’s physical and mental health status.[27-34]

A longitudinal study was conducted on 1091 secular individuals from East Baltimore in Canada from 1981 to 2004. The study participants attended religious worship gatherings at least once a year. Using a questionnaire, it was revealed that how often the individuals participated in the religious worship gatherings and to what extent the comfortable feelings and peace increased in them (confidence interval: 0.31–0.99 adjusted odds ratios = 0.55, 95%).[35] The results of the mentioned study were consistent with those of this study.

In a longitudinal study on 69 women in the 28–40 weeks of gestation and older than 18 years in Latin America, the relationship between spirituality and psychological, social, and maternal outcomes was investigated. In this study, 65% of the participants had high and moderate religious tendencies and

### Table 3: Comparison of the religious attitude score before and after the intervention, and 2 months after completion of the study in the intervention and control groups

<table>
<thead>
<tr>
<th>Intervention groups-score</th>
<th>Mean±SD</th>
<th>PV (between groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention group</td>
<td>Control group</td>
</tr>
<tr>
<td>Before</td>
<td>86.9±13.91</td>
<td>85.88±10.23</td>
</tr>
<tr>
<td>Immediately after</td>
<td>111.5±79.99</td>
<td>86.30±9.87</td>
</tr>
<tr>
<td>PV (inter group:</td>
<td>t=1.966, P=0.0527</td>
<td>r=0.191, df=82,</td>
</tr>
<tr>
<td>Before and immediately</td>
<td></td>
<td>df=8486</td>
</tr>
<tr>
<td>After 2 months</td>
<td>108.54±11.60</td>
<td>86.54±9.84</td>
</tr>
<tr>
<td>PV (inter group:</td>
<td>t=7.743, df=82, P&lt;0.0001</td>
<td>r=0.301, df=82,</td>
</tr>
<tr>
<td>Before and after</td>
<td></td>
<td>df=82, r=0.7639</td>
</tr>
<tr>
<td>2 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SD: Standard deviation; PV: P-value

### Table 4: Comparison of state anxiety scores before and after intervention and 2 months after completion of the intervention in the control and intervention groups

<table>
<thead>
<tr>
<th>Intervention groups-score</th>
<th>Mean±SD</th>
<th>PV (between groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention group</td>
<td>Control group</td>
</tr>
<tr>
<td>Before</td>
<td>41.54±10.33</td>
<td>48.45±9.35</td>
</tr>
<tr>
<td>Immediately after</td>
<td>38.76±9.21</td>
<td>46.46±9.99</td>
</tr>
<tr>
<td>PV (inter group:</td>
<td>t=1.966, P=0.001,</td>
<td>r=0.3487</td>
</tr>
<tr>
<td>Before and immediately</td>
<td></td>
<td>df=82, r=0.0001</td>
</tr>
<tr>
<td>After 2 months</td>
<td>43.45±8.48</td>
<td>50.94±9.04</td>
</tr>
<tr>
<td>PV (inter group:</td>
<td>t=1.966, P=0.0077,</td>
<td>r=2.732, df=82,</td>
</tr>
<tr>
<td>Before and after</td>
<td></td>
<td>df=82, r=5.1</td>
</tr>
<tr>
<td>2 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SD: Standard deviation; PV: P-value

### Table 5: Comparison of personality anxiety scores before and after intervention and 2 months after completion of the intervention in the control and intervention groups

<table>
<thead>
<tr>
<th>Intervention groups-score</th>
<th>Mean±SD</th>
<th>PV (between groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention group</td>
<td>Control group</td>
</tr>
<tr>
<td>Before</td>
<td>41.28±9.97</td>
<td>47.23±12.79</td>
</tr>
<tr>
<td>Immediately after</td>
<td>36.16±8.79</td>
<td>49.23±11.11</td>
</tr>
<tr>
<td>PV (inter group:</td>
<td>t=2.496, P=0.0145,</td>
<td>r=0.765, df=82,</td>
</tr>
<tr>
<td>Before and immediately</td>
<td></td>
<td>df=82, r=-5.9</td>
</tr>
<tr>
<td>After 2 months</td>
<td>44.30±8.84</td>
<td>54.4±10.10</td>
</tr>
<tr>
<td>PV (inter group:</td>
<td>t=1.469, df=82, P=0.1457</td>
<td>r=2.772, df=82,</td>
</tr>
<tr>
<td>Before and after</td>
<td></td>
<td>df=82, r=0.0069</td>
</tr>
<tr>
<td>2 months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SD: Standard deviation; PV: P-value
71.4% had spiritual tendencies and adhered to moral principles. The other results showed that:

- **Spiritual**: Religious values revealed a significant correlation with social protection and the average time of delivery, with perceived stress and depressive symptoms and the increased average birth weight. The results of this study are consistent with ours in reducing the mothers’ anxiety.\(^ {[12]} \)

This cross-sectional study (2005) was carried out on 300 pregnant women referring to 6 health care centers of Iran University of Medical Sciences in Tehran, in the field of Health knowledge of Islam during pregnancy period. The results showed that knowledge of 20.6% of the participants was fine, and that of 64.7% and 14.7% was average and poor. Health knowledge of Islam during lactation was 3.6% good, 77% moderate, and 16.7% were poor. Furthermore, it was shown that in 91.7% of the mothers who recited Quran anxiety was reduced during pregnancy. The results of this study are consistent with our findings in reducing the anxiety of the mothers and the importance of education in religious teachings during pregnancy together with medical training\(^ {[13]} \).

In a meta-analysis conducted in the field of mental health and religious studies, results showed a positive relationship between religion and mental health in 47%, in 23% of them there was a negative relationship, and in 30% no significant relationship was observed.\(^ {[14]} \)

Evaluation studies show that religious concerns can have a protective effect on anxiety and depression during pregnancy. Spiritual-religious values had an inverse relationship with the perceived stress. So, to raise knowledge and improve mental health during pregnancy and postpartum, training programs for prenatal care associated with Islamic teachings and training of health staff are also recommended.

In the end, it is recommended that pregnant women with spirituality can cope with the stress in pregnancy and spend pregnancy and postpartum period with more comfort. Hence, medical teams can double the effectiveness by appealing to religious culture in addition to the gained science and knowledge.

**Conclusions**

The study findings have indicated that religious teachings could enhance relaxation in pregnant women. Furthermore, women who were trained showed a good resistance against pregnancy and severe anxiety; in general, the level of anxiety was reduced in comparison with the group who had received no training. This can act as a guide for planners and health authorities of the country to emphasize more on religious beliefs in the health education programs for pregnant women and use the strategic element of religion in counseling with mothers with mental health disorders.

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**Conflicts of interest**

There are no conflicts of interest.

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