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DOI: 10.4103/jehp.jehp_924_20

# Promotion of posttraumatic stress disorder following traumatic birth experiences and the influence of maternity religious Attitude: A correlational study

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## Abstract:

**BACKGROUND:** Women who experience stillbirth and preterm delivery are likely to be associated with an increased risk of posttraumatic stress disorder (PTSD) compared to women with live births and dose religious attitude related to posttraumatic stress? The aim of the study was promotion PTSD following traumatic birth experiences and the influence of maternity religious Attitude.

**MATERIALS AND METHODS:** A cross-sectional analytical study was conducted at selected hospitals of Shiraz University of Medical Sciences on 82 subjects in 2018. The instruments were demographic questionnaire, Religious Attitude questionnaire, and Mississippi PTSD Scale which were completed after delivery. Data were analyzed using SPSS software, version 22, using the Pearson correlation test.

**RESULTS:** About 75% stillbirth group and 65% of the preterm delivery group had a high level of religious attitude. In the stillbirth group, 90% had high levels of PTSD and in the preterm delivery group, 90% had moderate stress, and 10% had high PTSD levels. The correlation between religious attitude and PTSD after stillbirth was 0.373 with a significance level of 0.018. Therefore, there was a significant positive relationship between religious attitude and PTSD. However, the relationship between religious attitude and PTSD after preterm delivery was not statistically significant ( $P=0.158$ ).

**CONCLUSION:** PTSD was significantly higher in mothers with stillbirth and had a significant relationship with religious attitude. However, in mothers of preterm infants, the level of stress was moderate and did not have a significant relationship with religious attitude. The findings indicate the need of mothers for interventions to cope better with the physical and psychological problems of stillbirth and preterm delivery.

## Keywords:

Attitude, posttraumatic stress, preterm delivery, religious, stillbirth

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Received: 21-08-2020  
Accepted: 15-03-2021  
Published: 29-10-2021

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## Introduction

Pregnancy, childbirth, and postpartum are crucial periods in women's lives. This period leads to the induction of great physical and psychological changes and family-social roles in women.<sup>[1]</sup>

Pregnancy loss can take many forms, including abortion, stillbirth, and miscarriage

and in all cases, it is accompanied by maternal and familial stress. Spontaneous abortion or miscarriage is the most common and severe complication of early pregnancy, occurring 17%–22% of all known pregnancies.<sup>[2]</sup> In a study in Tehran, it was estimated that in every 100 known pregnancies, 8.7% of pregnancies among married women end in abortion.<sup>[3]</sup> Stillbirth is typically defined as fetal death at or after 20–28 weeks of

**How to cite this article:** Alipanahpour S, Zarshenas M, Akbarzadeh M. Promotion of posttraumatic stress disorder following traumatic birth experiences and the influence of maternity religious Attitude: A correlational study. *J Edu Health Promot* 2021;10:385.

pregnancy<sup>[4]</sup> or Stillbirth is defined as fetal death after 20 weeks of pregnancy or birth weight of at least 400 g.<sup>[5]</sup> Besides, stillbirths include late fetal deaths weighing >1000 g or occurring after 28 weeks' gestation.<sup>[6]</sup> Ellis *et al.* reported that 2.7 million babies were stillborn in 2015 worldwide. In the UK, 3286 babies were stillborn in 2013 approximately 10 bereaved families every day.<sup>[7]</sup> Stillbirth results in a baby born without signs of life. The term is in contrast to miscarriage, which is an early pregnancy loss, and live birth, where the baby is born alive, even if it dies shortly after.<sup>[8]</sup> This article focuses specifically on the stress of still-birth and preterm women.

The risk of developing stillbirths in women whose first pregnancy has ended with the birth of a dead baby increases in the next pregnancy. Furthermore, the positive risk for posttraumatic stress disorder (PTSD) in women with stillbirth compared with those with live births is about seven times and their depression symptoms were as much as four times.<sup>[9]</sup> Studies showed that these stillbirth experiences intensify traumatic reactions such as despair, suicidal thoughts, anxiety, crime, shame, and anger.<sup>[10]</sup>

The loss of the fetus is known as a difficult life experience, which can often lead to complex grief reactions that have a negative effect on mental and physical health.<sup>[11]</sup> Of every five parents who suffer from this incident, one experiences severe sadness after the fetal loss.<sup>[12]</sup> The death of a child can lead to the deepening of faith as a supporter in the sadness and distress of death.<sup>[13]</sup>

The risk factors of stillbirth include increased maternal age and body mass, cigarette smoking, environmental pollution, true umbilical cord knot, congenital anomalies, maternal systemic disease, uterine abnormalities, premature rupture of chorioamnionitis, multiple births, placental abruption, embryonic growth restriction, mother's education, and male gender.<sup>[4,14,15-17]</sup>

The stillbirth rate in Canada in the Haitian race was 7.2 per 1,000 births and 3.9 per 1,000 births during 1981–2010.<sup>[18]</sup> Besides, a study was conducted on 5170 pregnancies in Tehran, Iran, since 2015. Results showed that stillbirth was more observed among low-income people. Maternal-related factors were the most positive and negative contributors to stillbirth. For example, mother's education (50%), mother's occupation (30%), economic status (26%), and father's age (12%) had the highest positive contributions to measured inequality in stillbirth history in Tehran. Mother's age (17%) had the highest negative contribution to inequality.<sup>[19]</sup> Another risk factor, which is often traumatic and a source of parental distress, is preterm delivery. It is recognized as an emotional crisis and is diagnosed with the feeling of loss and sadness, and sometimes, it lasts for months

after the infant discharge from the hospital. For many mothers, coping with preterm infants is like dealing with having a child with disabilities.<sup>[20]</sup>

Potential stressors that can affect parents of preterm infants include problems with the health of the infants in the hospital after discharge, reduced responsiveness, and concerns about the neonatal mental development.<sup>[21]</sup> Worldwide, about 13 million babies are born before 37 weeks of gestation. Rates are generally higher in low- and middle-income countries. Premature birth is the leading cause of infant death (27%) (6), that is reported in 2013, 6.30% in Tehran (Iran).<sup>[22]</sup>

The prevalence rates of preterm delivery in different cities of Iran were reported between 5.6% in Qom to 39.4% in Kerman.<sup>[23]</sup> The results of the study on preterm delivery women indicated that 77.8% of them had positive anxiety in terms of depression symptoms.<sup>[24]</sup> Some women had anxiety, anger, PTSD, and guilt feelings about having a baby in the future, harmful effects on husband and wife's relationship, and failure to play parental roles.<sup>[25,26]</sup>

Methods to deal with PTSD and psychological problems include emotional expression, social support, and avoidance of stressful situations, family and spiritual support, exposure therapy, referral to supportive groups, individual counseling, psychiatric drugs or other medications for the treatment of physical symptoms, relaxation, film therapy, psychotherapy, and logotherapy.<sup>[27-29]</sup>

Religious belief is an effective factor on the health of individuals which can be used in the prevention and treatment of psychological disorders to increase the ability of individuals to adapt and cope with diseases and enhance life satisfaction.<sup>[30]</sup>

The need for the present study was due to the following reasons:

- The prevalence of stillbirth, preterm delivery, and occurrence of postmortem physical and psychological complications are considered
- In some studies, faith and belief in healing by God has been used in the treatment of diseases and pain relief, anxiety, depression, and its resulting tensions.<sup>[31]</sup> Besides, the concept of "religious attitude" in this research is in the field of religious awareness, attitude, and practice, which is listed in Table 1 of the sample questionnaire's questions [Table 1]

The idea of having children is considered as one of the infrastructural processes in Muslim countries. The child gives a special purity and intimacy to the family, and because he is loved by his parents, both are attached to him. Nelson *et al.* also showed that

**Table 1: Questions of religious attitude questionnaire**

Questions	Firmly strongly agree	Somewhat agree	Between	Somewhat disagree	Strongly disagree
1. Religion helps a person to maintain balance and stability in his behavior					
2. Religion answers many questions that arise in life					
3. I feel that there are more important things in life than religion					
4. In the way of religious beliefs, everything must be sacrificed, even the soul					
5. It is not necessary to believe in life after death while believing in God					
6. Religious beliefs create peace of mind					
7. Religious thinking strengthens the spirit of altruism					
8. Genuine religious centers are a good place for the development of personalities					
9. Human society is compatible with human education					
10. Religious laws and rules are in harmony with human nature					
11. Many social problems will be solved if the people in charge of important things adhere to religion					
12. The basic goals of human life must have a religious basis					
13. Worshiping God is the highest pleasure of life					
14. Man should have a pure heart, performing religious duties is not a condition					
15. In all matters of life, we need prayer and recourse					
16. Man must believe in the promises of God in the Qur'an					
17. I always prefer tourist excursions to pilgrimages					
18. The heavenly books should be the guide of the people					
19. Adherence to religion is not necessary in all living conditions					
20. Religious beliefs should be applied in daily life					
21. Praying and seeking God's guidance prevents man from the temptations of the soul					
22. Religion spreads superstitions in the human mind					
23. God should be asked for help when making important decisions					
24. In addition to daily prayers, the believer should also pray in private					
25. Vows and alms eliminate problems and prevent dangers of life					

the idea of having children was effective in creating peace, consolidation, and efficiency of the family. Therefore, in these societies, the loss of pregnancy may be associated with more stress.<sup>[32]</sup>

- The current sources mostly examined the effects of risk factors and maternal psychological and physical illnesses such as preeclampsia, hypertension, and diabetes on the incidence of preterm delivery and stillbirth. Accordingly, considering the importance of early diagnosis of PTSD disorder, interventions to increase the coping power of parents of preterm and stillbirth infants, and lack of sufficient study in Iran. The researcher investigated the relationship between PTSD and religious attitude after stillbirth and preterm delivery in selected educational centers of Shiraz University of Medical Sciences in 2018.

## Materials and Methods

### Study design and setting

This cross-sectional study was performed in selected hospitals of Shiraz University of Medical Sciences, namely Hazratzeinab, Shahid Faghihi, Hafez, and Shoostari hospitals, due to availability and frequent referrals of patients to these hospitals.

### Study participants and sampling

The sample size was calculated as 82 individuals based on the estimation of the correlation coefficient reported in Cowchock's study<sup>[33]</sup> (74 individuals), with a probability of 10% loss. The sampling period lasted for 4 months from September 2018 to January 2019. The samples were selected by convenience sampling method based on the monthly number of stillbirths and preterm delivery in each hospital. If the mother had experienced a distressing or traumatic birth, criterion A of DSM-IV<sup>[34]</sup> for PTSD was used to screen the women. Mothers were asked if they were worried about their fetus or their baby during childbirth or if they were afraid of a serious injury or permanent damage. Childbirth was considered traumatic in those who answered yes to this question<sup>[35]</sup> and therefore, met criterion A of DSM-IV. Then, the written consent was completed by the members to participate in the study. The study inclusion criteria were age between 10 and 49 years old, Iranian nationality, ability to read and write, the experience of stillbirth or preterm delivery, no chronic illness, and no history of psychological treatment. On the other hand, those mothers entered the study who had no history of stress problems to be sure if the stress was due to a current abortion. The study exclusion criteria were desire

to withdraw from the study at any time of the study and in the event of any mishaps affecting the mother (such as a financial crisis or bereavement).

### Data collection tool and technique

Data collection tool included Demographic Information Questionnaire, Posttraumatic Stress Questionnaire, and Religious Attitude Questionnaire. The demographic information questionnaire consisted of 60 researcher-made questions in two sections:

1. Demographic questionnaire (14 questions) and 2 - Midwifery information questionnaires (46 questions). To determine the validity of the questionnaire, the content validity method was approved by a number of faculty members of Shiraz University of Medical Sciences
2. Mississippi PTSD Scale: Mississippi PTSD Scale consisted of 35 questions ranging from 1 to 5. The total score ranges from 35 to 175 with scores of 107 and above, indicating a person with PTSD.<sup>[36-38]</sup> This scale has been validated in Iran by Goodarzi (2002) and Cronbach's alpha coefficient has been reported as 0.92. To determine the concurrent validity of this scale, we used three tools of life events inventory, PTSD index, and Padua inventory. Correlation coefficients of the Mississippi scale in each tool have been reported as 0.23, 0.82, and 0.75, respectively.<sup>[38]</sup> Validity and reliability of Goodarzi study has been the basis of our study
3. Religious Attitude Questionnaire: Religious Attitude Questionnaire contains 25 questions scored by 5-point Likert scale data set from 1 to 5. Individuals in this questionnaire had a high-level score (with score 100 and higher), low-level score (with score 50 and lower), and moderate-level score (with score 51–99) of religious attitude.<sup>[39-41]</sup> Thus, the higher the score, the higher the level of religious concern. This questionnaire is scored through a Likert scale and its Cronbach's alpha coefficient has been computed as 0.954. The reliability and validity indexes reported in Ebrahimi's study were the basis of the current study.<sup>[39]</sup> Validity and reliability of Ebrahimi's study have been the basis of our study. In this study, the study population was 100 Muslims. Therefore, the attitude measured in this study was "Islamic religious attitude." According to the questionnaire, the word "religious attitude" is used throughout the article. It is listed in Table 1 of the sample questionnaire questions [Table 1].

After obtaining permission from Shiraz University of Medical Sciences and obtaining a letter of introduction, the researcher referred to three hospitals. The mothers who were candidates for stillbirth and preterm labor for any reason were studied as a target population and placed in the research community. The data collection

method in this study was intended to provide women with stillbirth and preterm labor were given a verbal lecture and written information about the goals, approach of the project with the necessary training on the purpose of this study and how to fill out the questionnaire and keep the information confidential. If the mother wished, they signed a written consent form and participated in the study. After receiving written consent from eligible individuals, the general information questionnaire was completed, and the medical history and midwifery records were recorded until the moment of the still-birth and preterm labor. Then, the religious questionnaire was used to measure religious attitudes and after 4–6 weeks a standardized questionnaire was used to measure stress levels to be completed by the mothers (by phone). At 4–6 weeks of maternal follow-up, if the mother did not answer the phone, she was called again, and in limited cases, up to 5 calls were made. The majority of mothers were responsible for the first time, and a small number (8 people) needed to be contacted again.

### Ethical considerations

This research project was approved by the Ethics Committee of Shiraz University of Medical Sciences with (proposal No. 1396-01-85-15166) the code number of IR.SUMS.REC. 1396.S676. In addition, written informed consents were obtained from all the participants. This study was financially supported by Shiraz University of Medical Sciences. The mothers could withdraw from the study at any stage. Moreover, the mothers did not have to write their names when completing the questionnaires. The participants were assured of the confidentiality of all their personal information. The researchers tried to observe all the participant's rights in accordance with the Helsinki ethical convention.

### Results

A total of 82 mothers participated in this study and collaborated till the end of the study. The results of the demographic characteristics of the stillbirth and preterm delivery are presented in Table 2. Furthermore, the comparison of fertility characteristics in labor among the 2 groups showed that there was no significant difference in labor pain (0.785), effacement (0.063), bleeding (0.084). In stillbirth, the average religious attitude was  $100.48 \pm 11.02$  and in the preterm delivery  $104.65 \pm 15.24$ . The mean PTSD in the stillbirth and preterm labor groups was estimated to be  $136.30 \pm 21.41$  and  $91.98 \pm 9.20$ , respectively [Table 3]. Correlation between religious attitude and postmortem stress (0.35) with a significance level of 0.029 was determined using the Pearson correlation test. Therefore, there was a significant positive relationship between the two variables of religious attitude and PTSD. Using the Pearson correlation test, we found that the correlation



between religious attitude and postpartum stress in preterm delivery was 0.04 with a significance level of 0.8. Therefore, there was no significant relationship between these two variables; the higher the religious attitude, the higher the level of stress [Table 4].

### Discussion

Results of this study showed that PTSD was significantly high in mothers of stillbirth, and it had a significant relationship with religious attitude. In Van's study on coping with grief after childbirth, it was shown that adverse physical and psychological consequences can be prevented by training women to identify the grief responses and applying the influence of family, friends, religion, and cultural traditions.<sup>[42]</sup>

**Table 2: Frequency distribution of demographic characteristics based on stillbirth and preterm delivery**

Variable	Component	Stillbirth, n (%)	Preterm labor, n (%)
Age	<20 years	8 (20.0)	12 (30.0)
	20-30	22 (55.0)	20 (50.0)
	>30 years	10 (25.0)	8 (20.0)
Education	Elementary	4 (10.0)	6 (15.0)
	Middle school	6 (15.0)	4 (10.0)
	High school (diploma)	20 (50.0)	20 (50.0)
	Licensee	8 (20.0)	10 (25.0)
	Postgraduate	2 (2.0)	0
Job	Housewife	32 (80.0)	36 (90.0)
	Self-employment	6 (15.0)	4 (10.0)
	Employment	2 (5.0)	0
	Total	40 (100.0)	40 (100.0)

**Table 3: Descriptive statistics of religious attitude variables and posttraumatic stress disorder intensity based on stillbirth and preterm delivery**

Variable	Component	Preterm labor, n (%)	Stillbirth, n (%)
RA-score	Medium (50-100)	14 (35.0)	10 (25.0)
	High (100-125)	26 (65.0)	30 (75.0)
	Total	40 (100.0)	40 (100)
	Mean±SD	104.65±15.24	100.48±11.01
PTSD-score	Medium (70-107)	36 (90.0)	4 (10.0)
	High (107-175)	4 (10.0)	36 (90)
	Total	40 (100.0)	40 (100)
	Mean±SD	91.98±9.20	136.30±21.41

RA-score=Religious attitude score, SD=Standard deviation, PTSD=Posttraumatic stress disorder

**Table 4: Correlation of religious attitude and posttraumatic stress disorder after birth and premature delivery**

Mother-condition	Correlation	n	Significance level
Stillbirth	0.373	40	0.018
Preterm labor	0.227	40	0.158

Cowchock in a study on the effect of religious belief on grief after stillbirth showed that 4–6 weeks after the death of the fetus, belief in God reduced the grief scores.<sup>[43]</sup> Furthermore, Mann's study on the effect of spiritual and religious factors on postpartum depression showed that religious participation protected the mothers from early postpartum depressive symptoms.<sup>[44]</sup> Other studies also showed that family accompaniment by priests had a significant effect on reducing the suffering and distress of parents and decreased the stress symptoms 3–6 months after stillbirth.<sup>[45,46]</sup>

The above studies showed that higher religious attitudes and spiritual beliefs reduced stress in mothers who lost their child. These results are not consistent with those of our study regarding the lack of significant relationship between stress and stillbirth. The above studies show that PTSD declines markedly over time in terms of the severity of the initial response and the number of people who exhibit these reactions.<sup>[47]</sup>

In a recent 25-year study, an article on pregnancy found no correlation between religious attitudes with stillbirth and preterm delivery. However, research has been published that is consistent with the results of the present study. In the study of Park *et al.*, strong spiritual values were positively associated with increased rates of current depressive disorder and decreased rates of current alcohol use disorder.<sup>[48]</sup> Furthermore, in the study of Koenig and Larson which has been done on 4132 people in Canada, they were constantly worshipping and joining religious gatherings. It turned out that these people were less depressed, while there was no relationship between depression and their individual worship.<sup>[49]</sup> It has been reported in another study that women rabbis reported the highest stress levels in various studies.<sup>[50]</sup> According to the results of the present study, it can be said that deprivation of having children (due to the importance of having children among Muslim women in our society) has increased maternal stress and even high religious attitudes have not been effective in controlling PTSD, or it is possible that the pregnancy occurred after untreated infertility, and this has led to increased stress due to the high cost of infertility treatment in Iran, and religious attitudes have not controlled PTSD (although the history of infertility has not been studied in the questionnaire). Besides, the mothers might have poor obstetric history (previous abortion, dead fetus), the spouse might have strong willingness to have children, and the majority of mothers are housewife, have no work, so they have more time. All these are the possible factors that need to be examined fully with more documentation. Finally, there might be a low probability that mothers did not fill out the actual questionnaires due to the religious atmosphere of the Iranian society and refused to write their real opinion. For this reason, the level of religious

attitude is shown to be high (while they may not really have a high attitude). In the Holy Qur'an, in Surah Al-Ra'd, verse 28, it is said that

*[Those who turn to God] Those who are faithful, their hearts are assured by the remembrance of Allah. Unquestionably, by the remembrance of Allah the hearts are assured". If faith is true, it will be reassured by the remembrance of God. And no one can have a high level of religious attitude and stress can stay high.*

In the present study, PTSD disorder in mothers of preterm infants was mostly moderate and had no significant relationship with religious attitude.

Other Studies show that mothers with preterm delivery are at increased risk for PTSD and postpartum depression.<sup>[24,51,52]</sup> According to some studies, the prevalence of postpartum PTSD was 1.7%–9%, while in preterm delivery it was 23%–35% in mothers admitted to the neonatal intensive care unit.<sup>[53,54]</sup>

The results of Gray's study on parental stress in mothers with preterm delivery showed that postpartum stress levels of these mothers were not different from the mothers with term infants.<sup>[21]</sup>

In our study, as in the above-mentioned studies, the level of maternal stress was increased, so that 90% of the mothers had moderate stress and 10% had high levels of stress. These results were consistent with those of all the above-mentioned studies, except for the results of Gray's study.

However, the difference between our study and the above mentioned studies is that none of them measured the relationship between stress and religious attitude and no similar study was found.

The findings of MirBagher's study on pregnant women during cesarean section indicated that 5 min of listening to the Koran sound reduced anxiety significantly.<sup>[55]</sup> Moreover, the results of Kamala's study on the effect of spiritual care training on PTSD disorder in 32–38 weeks of pregnancy showed that providing spiritual care to pregnant women with preeclampsia reduced the risk of PTSD.<sup>[56]</sup> Spirituality is a strong predictor of PTSD reduction in women and their spouses, and lack of or weakness in spirituality is considered as an influential factor for stress, anxiety, and depression.<sup>[57]</sup>

In this respect, our study is inconsistent with the above studies. Our study showed that 90% of mothers with preterm delivery had moderate levels of PTSD and a high religious attitude. Among the reasons for the differences between our study and other investigations

mentioned above is that there was no intervention in the present study, whereas in the above studies spiritual care training for mothers reduced their PTSD.

Numerous studies have shown that the mothers' stress and anxiety lead to preterm delivery.<sup>[58,59]</sup> It seems that this stress and anxiety is chronic in these mothers, so that even having a high religious attitude does not reduce the stress level in these mothers because of the institutionalized and chronic nature of this anxiety. Anxiety reduction in these mothers requires extensive spiritual training and support programs to enable them to have a healthy life without anxiety. It will also eliminate the role of stress and anxiety in preterm birth in subsequent pregnancies.

Other studies show that religious-oriented counseling and psychotherapy can be used to reduce psychological problems and increase mental health. Furthermore, women who were considered vulnerable from the mental health point of view showed a significant decrease in PTSD, anxiety, and depression by attending spiritual-religious psychotherapy sessions.<sup>[60]</sup> One of the strengths of the plan is the limitation of research on traumatic birth experiences and religious attitudes. And can be the basis for other studies. It is suggested that the following issues be considered in future studies: (1) Comparison of the severity of PTSD in stillbirth, abortion, and preterm delivery in Iranian women aged 15–49 during a 4-year period according to their demographic characteristics and religious attitudes. (2) Comparison of the severity of PTSD in stillbirth, abortion, and preterm delivery in high-risk and low-risk women.

## Conclusion

In the stillbirth group, 90% had high levels of PTSD and in the preterm delivery group, 90% had moderate PTSD. Two-thirds of the study sample had an almost high level of religious attitude. There was a positive significant relationship between religious attitude and PTSD score in mothers with stillbirth, but not with preterm delivery. The findings indicate that interventions are needed to better address the mothers' physical and psychological problems of stillbirth and preterm delivery.

## Acknowledgment

The present article was extracted from our research project (proposal No. 1396-01-85-15166). The study was financially supported by the Research Vice-chancellor of Shiraz University of Medical Sciences, Shiraz, Iran. The authors would like to thank Shiraz University of Medical Sciences, Shiraz, Iran and also Center for Development of Clinical Research of Nemazee Hospital and Dr. Nasrin Shokrpour for editorial assistance.

## Financial support and sponsorship

This study is derived from the research project, approved and financially supported by the Vice-Chancellor of Research and Technology, Shiraz University of Medical Sciences (study number: 15166).

## Conflicts of interest

There are no conflicts of interest.

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