

## The Relationship between Spiritual Health and the Intensity of Post-Cesarean Section Pain

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### ABSTRACT

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**Background & aim:** Cesarean section (C-section) has often been one of the most common surgical procedures for women. It can be associated with several psychological and mental factors. Recently, spirituality related to adaptation with stressful situations has also been emphasized. Therefore, the purpose of this study was to investigate the relationship between spiritual health and pain intensity following a C-section.

**Methods:** This cross-sectional study was conducted in Sayyad Shirazi Hospital, Gorgan city, Iran in 2013-2014. To this aim, 200 pregnant women, who wanted to undergo C-section were selected through convenience sampling method. The data were collected via demographic characteristics form, well-being Questionnaire at the beginning of the study, and Visual Analogue Scale at three stages of immediately, one hour, and 6-8 hours post-delivery. All the data were analyzed by statistical tests, including Pearson's correlation and independent t-test using SPSS Version 16.

**Results:** This cross-sectional study was conducted in Sayyad Shirazi Hospital, Gorgan city, Iran in 2013-2014. To this aim, 200 pregnant women, who underwent C-section were selected through convenience sampling method. The data were collected via demographic questionnaire, Paloutzian and Ellison well-being Questionnaires (SWBQ, 1982) at the beginning of the study, and Visual Analogue Scale at three stages of immediately, one hour, and 6-8 hours post-delivery. Data were analyzed by statistical tests, including Pearson's correlation and independent t-test using SPSS Version 16.

**Conclusion:** According to the results of this study, no relationship was found between the pain intensity after C-section and spiritual health at several stages of post-delivery phase.

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## Introduction

Cesarean section (C-section) rate showed a slight descending trend following enforcement of certain policies in some countries. Yet, this type of delivery is not at the level recommended by the World Health Organization (WHO) (15%) and is known as one of the most commonly used gynecological surgeries (1). According to the

WHO, prevalence of this operation has been reported as 30.2, 22, 41.3, and 40.5% in the United States, United Kingdom, Brazil, and China, respectively (2). In 2010, the rate of C-section in university-affiliated hospitals all over Iran was 48%, while it was reported as 90-100% in some private hospitals. In addition, this

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rate was stated as 60.8% in Golestan province, Iran in 2002 (2, 3, 5).

Pain after C-section is a common problem, which makes the person avoid coughing, deep breathing, and moving. Subsequently this pain might increase the risks of thromboembolism in patients. Moreover, the pain following C-section not only can cause physical problems, but also brings about anxiety, fear, sleep deprivation, anger, and depression (6). Various factors, such as the extent of surgery, patient pain threshold, and response rate of patients to pain can affect post-cesarean section pain. Pain is considered as a multifactorial issue triggered by physical, psychological, social, and spiritual factors (7).

Spiritual health is defined as a basic need for goal, meaning, and love in life. It has two aspects of existential and religion-related health. Existential health means aiming and life satisfaction, while the religion-related health could be obtained by communicating with a superior power or God (9).

Different studies showed relationships between spirituality and religious believes with the physical and psychological health and even the quality of life (QoL). For example, pain decrease and better results in sickle cell anemia (10), rheumatoid arthritis (11), epilepsy (12), pain reduction in different personal experiences (8), better health conditions, enhanced coping with the disease consequences, reduced level of depression, anxiety, suicide, as well as improved QoL even among the people in the last stages of their lives (13). Other studies recommend the health care staffs to consider the spiritual and religion-related needs of the patients for enhancement of treatment quality, in addition to the correct and proper care services (14).

Regarding the importance of spirituality in different situations, QoL of the people and patients, prevalence of C-section, and influences on the spiritual and physical health of mothers, this study aimed to determine the relationship between the spiritual health and post-cesarean section pain. We aimed to evaluate whether by incorporating spiritual and religious contents into childbirth classes or persuading pregnant women to spiritual tendencies peace and acceptance of the critical

and acute conditions can be achieved in pregnant women or not.

## Materials and Methods

This cross-sectional study with analytical descriptive approach (2013) was carried out on about 700 pregnant women, who referred to Shahid Sayyad Shiraz Hospital in Gorgan city for delivery. We selected 200 participants from the candidates of C-section through convenience sampling method. The sample size was estimated according to sample study with  $p=0.05$  and confidence of  $d=0.2$ . First, 258 people entered the study, 23 of which left the study before surgery. In addition, 15 people received general anesthesia, three patients were omitted because of hypertension, eclampsia, and postpartum hemorrhage, and 17 patients were not eager to continue after the operation.

The inclusion criteria for the study entailed giving written consent, ability to read and write, and not receiving epidural anesthesia during the surgery. The excluding criteria were dissatisfaction for cooperation, problems during or after surgery requiring intensive care unit, and use of general or spinal anesthesia.

The data collecting tools included personal information forms, spiritual well-being questionnaires of Paloutzian and Ellison (SWBQ) (1982), and visual analog scale (VAS). The SWBQ composed of 20 questions, the answers of which were as 6-point Likert scale ranging from absolutely disagree to absolutely agree. Eleven questions of this questionnaire had reverse answers. Ten of the questions were about existential health and the remaining ten questions were associated with religion-related health. The spiritual health score was the sum of these two groups ranging from 20 to 120. Therefore, the outcomes of spiritual health were divided into three groups of low (20-40), medium (41-99), and high (100-120). The reliability of this questionnaire was calculated as  $R=0.82$  (15).

Before surgery, the participants filled up the personal information forms and SWBQ. Afterwards, they were taught how to use the VAS. Following C-section, the patients reported VAS at three times. The first time was immediately after entering the recovery room. The second was an hour post-surgery, when the

effect of epidural anesthesia faded before administering the analgesics (opioid or NSADIs). The final report was 6-8 h post-surgery, which was the end of analgesics half-lives. In addition, the vital signs of individuals were controlled and registered in all these three stages. All the data were analyzed by descriptive statistics for the demographic data, Pearson correlation test, and independent t-test using SPSS version 16.

## Results

The range of women age was 21-58 years with the mean of  $26.8 \pm 5.7$  years. Regarding the educational level of participants, 19% (N=38), 24% (N=48), 43.5% (N=78), and 13.5% (N=27) had primary school, middle school, high school, and university degrees, respectively. In terms of occupation status, 91.5% (N=183) were housewives and the rest were students or clerks. Moreover, 12% of the samples (N=24) had family income of less than enough, while 85.5% of the women declared their family incomes to be enough, and the rest mentioned the income as "more than enough".

The findings showed that the mean body mass index (BMI) of the participants was  $28.8 \pm 5.1$  ranging from 18.3 to 53.98 Kg/m<sup>2</sup>. In addition, the mean number of labors was revealed as  $1.8 \pm 0.7$ . According to the results, the mean spiritual health score was  $100.1 \pm 8.7$ , in which religion-related health score was  $52.8 \pm 4.6$  and contribution of existential health was  $47.3 \pm 5.4$  (Table 1). Among the studied women, 94.5% (N=189) had high religion-related health. Furthermore, 65% (N=130) of the subjects had high existential health and 87% (N=174) had high spiritual health, while the rest were in medium level. None of the cases studied had low religion-related, existential, or spiritual health.

The mean pain score of the women after C-section was  $4.3 \pm 3.56$ ,  $7.6 \pm 2.7$ , and  $6.5 \pm 2.6$  in the recovery stage, an hour post-surgery and 6-8 h post-surgery, respectively (Table 1). Most of the studied women (36%) suffered from medium level pain in the recovery stage, 59.5% (N=119) had severe pain an hour post-surgery, and 47.5% (N=95) declared their pain as medium level 6-8 h post-surgery.

There was no significant difference between the pain score of women with high or medium

levels of spiritual health in the recovery stage ( $P=0.191$ ).

**Table 1.** Mean and standard deviation of spiritual health and the pain after Cesarean section among the study participants

Variable	Mean $\pm$ SD	Range
Religion-related health	$52.8 \pm 4.6$	37-60
Existential health	$47.3 \pm 5.4$	32-60
Total spiritual health	$100.1 \pm 8.7$	74-120
Recovery	$4.3 \pm 3.56$	0-10
1 h post-surgery	$7.6 \pm 2.7$	0-10
6-8 h post-surgery	$6.5 \pm 2.6$	0-10

Moreover, 1 h post-surgery, still there was no significant difference between the pain score of women with high or medium levels of spiritual health ( $P=0.781$ ). Finally, 6-8 h post-surgery no significant difference was observed between the women with high or medium levels of spiritual health regarding the pain score ( $P=0.928$ ) (Table 2).

The pain score did not show a significant difference between the women with high and medium levels of religion-related health in the recovery stage, 1 h post-surgery, and 6-8 h post-surgery ( $P=0.12$ ,  $P=0.631$ ,  $P=0.267$ , respectively). Moreover, the women with high and medium levels of existential health were not significantly different regarding the pain score in the recovery stage ( $P=0.448$ ). However, 1h post-surgery, there was a significant difference between the pain score of the women with high and medium levels of existential health ( $P=0.022$ ). Finally, 6-8 h post-surgery the difference between the pain score of the women with high and medium levels of existential health was not significant ( $P=0.38$ ).

According to the results of Pearson correlation test, no significant linear relationship was observed between the spiritual health and post-cesarean section pain score in recovery ( $P=0.14$ ,  $r=-0.11$ ), 1 h post-surgery ( $P=0.278$ ,  $r=0.08$ ), and 6-8 h post-surgery ( $P=0.592$ ,  $r=-0.04$ ). Regarding the religion-related health, the results of Pearson correlation test revealed lack of significant linear relationship between the religion-related health and post-cesarean section pain score in recovery ( $P=0.0137$ ,  $r=-0.11$ ), 1 h post-surgery ( $P=0.961$ ,  $r=-0.01$ ), and 6-8 h post-surgery ( $P=0.214$ ,  $r=-0.09$ ).

**Table 2.** Mean and standard deviation of post-cesarean section pain score according to the spiritual health level of the study participants

Spiritual health	Post-cesarean section pain					
	Recovery		1 h post-surgery		6-8 h post-surgery	
	N	Mean±SD	N	Mean±SD	N	Mean±SD
High	174	4.2±3.5	174	7.6±2.7	174	6.5±2.6
Medium	26	5.2±3.2	26	7.4±2.9	26	6.5±3
P-value		0.191		0.781		0.928

Furthermore, considering the existential health, the results of Pearson correlation test demonstrated that there was no significant linear relationship between the existential health and post-cesarean section pain score in recovery ( $P=0.266$ ,  $r=-0.08$ ), 1 h post-surgery ( $P=0.076$ ,  $r= 0.13$ ), and 6-8 h post-surgery ( $P=0.854$ ,  $r=-0.01$ ).

## Discussion

The results of current study indicated that 87% of the participants ( $N=174$ ) had high spiritual health, 94.5% ( $N=189$ ) had high religion-related health, and the other 13% ( $N=26$ ) were in medium level. However, the relationship between the spiritual health and post-cesarean section pain scores were not significant. The Iranian society is religious and it is thought that the religious believes could have a crucial role in managing the critical situations.

Nonetheless, these results are to some extent different from the results of study conducted by Beiranvand et al. (2014) on the impact of religion and spirituality on the post-cesarean section pain. These authors showed that prayer and concentration on the superior force among the religious people might affect the post-cesarean section pain. However, in spite of the fact that people were religious in the mentioned study and accepted to do the recommended prayer, this relationship was not observed before or during the prayer and was only observed 3 and 6 h post-meditation and prayer.

The latter difference could be explained by the fact that getting help from beliefs in critical situations needs education, repeat, and reminding. Therefore, beliefs by themselves cannot be cooperative in critical conditions (16). These results are relatively in agreement with the study by Harrison et al. (2005), in which the

relationship between sickle cell and spirituality was investigated. This research showed that believes and spirituality of people who are inherently religious or read the religious books cannot influence their acute pain attacks and adaptation with the critical situations (17).

However, in individuals who continuously participate in the religious ceremonies or attend church weekly and rehearse meditation, the relationship between the pain intensity reduction and spirituality was significant (10). Although in the study performed by Locchetti et al. (2011), like the present one, no intervention was applied, they revealed that among the elderly people living in rehabilitation centers, the religion-related believes significantly reduced pain. It should be noted that the religious people in the mentioned study repeatedly did the acts, such as presentation in religious places, participating in religion-related ceremonies, reading religious books, and watching religion-related TV programs.

In the study by Locchetti, pain was regarded as the general term and did not differentiate the acute and chronic ones. On the other hand, the difference between the mentioned study and the present one could be attributed to the sample population, as well as the continuous participation of the cases in the religion-related ceremonies (18). In the present study, the SWBQ of Paloutzian and Ellison was applied which only ask about the heart believes, and have no questions about the continuous participation in the religion-related ceremonies and places or reading religious books. However, both studies by Locchetti et al. and Harrison et al. emphasize on the relationship between the continuity of participation in religion-related ceremonies and effects on the pain improvement. Therefore, the difference between the results could be associated to this phenomenon.

Repintrop et al. (2005) showed that

spirituality and religion-related believes are effective in the chronic pains, but not on the acute ones. In addition, they revealed that the more improper the physical health conditions are, the more the patients are willing to do religion-related activities, such as prayer, reading religious books, and concentrating God. Some authors concluded that the higher mental health might be directly related to higher spiritual health.

The results of our study showed that most of the studied cases had high spiritual health scores. The mean pain intensity in all the three stages was in the middle levels of the 10-degree VAS (Table 1). Moreover, Repintrop et al. stated that having enough time to communicate with God and to concentrate on believes could influence the acute pains. This study similar to the previous studies, in particular the study by Beyranvand et al., demonstrates that understanding and showing the effect of spiritual forces are time consuming. In addition, most researches highlight the impact of spirituality on chronic pains or long-term QoL confirming this process as time demanding (16, 19).

The present study indicates that the spiritual health and its aspects, namely religion-related and existential health have similar impacts on the post Cesarean section pains. In the study by Allahbakhshian et al. (2010), existential health had different effects on the QoL, in comparison with spiritual and religion-related health.

In their study, the samples were chronic multiple sclerosis patients, who suffered acute pains in time of disease attacks causing the repetitive attacks to influence their QoL and challenge their spiritual health. These patients feeling different with the healthy people always leads to psychological tensions. Therefore, it is possible that the existential aspect of their spiritual health is enhanced for finding a meaning and goal for their life. Consequently, the two features could have different effects (15, 20).

The findings of this study showed that the spiritual health in the majority of participants was in high and moderate levels. In the research performed by Abbasi Mojgan et al. (2005), the spiritual health of the subjects was (41-99) high and moderate (21). Furthermore, in the study by

Rezaei Mahboubeh et al. (2008) the spiritual health was moderate in the research community (98-114) (21). These results may reflect spirituality of the community. On the other hand, many people are consciously or unknowingly aware of the tendency to spirituality because spirituality is a value in Iranian society. The results of these two studies in terms of high spiritual health among the people of our country are somewhat consistent with the present study.

In the current study, there was no significant relationship between the spiritual health and vital signs in different hours post-surgery. Nevertheless, in the study by Beyranvand et al. (2014) the difference regarding the systolic and diastolic blood pressure, pulse, and respiratory rate of the patients was significant between the evaluations before and after prayers in the two groups of control and intervention (16). One might claim that the strength of this study was studying the relationship between spirituality and acute and severe pain that has been highly prevalent in recent decades.

It should be noted that spirituality and religiousness in our country are considered as advantages. As a result, the disadvantage of this study was that the majority of people avoided correct expression of their feelings and attitudes. Therefore, considering the limitations of this study, further investigations in different ethnicities and regions are recommended for more accurate results.

## Conclusion

This study aimed to evaluate the relationship between a surgical procedure and common pain with spirituality. However, the results indicated that the relationship between the spirituality and post Cesarean section pain was not significant. According to our findings, time and exercise are necessary for applying the spiritual forces. Therefore, proper classes during pregnancy period for enhancing the spiritual health might give meaning and goal to life and result in improved spiritual aspect of human. Moreover, it might be helpful to talk about the spiritual topics in pre-labor classes helping the pregnant women benefit from this internal force in critical situations.

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## Conflicts of interest

The authors declare no conflicts of interest.

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