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Relationship between Mothers' Spiritual Health Scores with Newborns' Physical Development Indices and Physiologic Parameters in Hazrat Zeinab Training Hospital

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ABSTRACT

Background: Spiritual health is one of the important factors predicting human health. This study aimed to determine the relationship between mothers' spiritual health with newborns' physical development indices and other physiologic parameters.

Methods: In this cross-sectional study, 155 mothers giving birth to newborns were selected from Hazrat Zeinab hospital during 2017-2018. The data were gathered through a checklist containing all mothers' and babies' demographic information. Moreover, we used Palutzian and Ellison's scale to measure the mothers' spiritual health score. To analyze the data, we used SPSS software (version 18).

Results: The mothers' mean age was reported as 27.84±6.67 years. Moreover, 71.6% of the mothers' educational level was under diploma, and 65.2% of them were not employed (did not have any jobs). The mean score of the mothers' spiritual health was 75.96±8.75. In this regard, 97.4% of the subjects had a moderate level of spiritual health, and 2.6% of them had a high level of spiritual health. There was a significant negative correlation between the mothers' spiritual health score and neonates' physical development scores. However, this correlation was significant (height: r=-0.1, P=0.21; weight r=-0.058, P=0.47; size of head: r=-0.033, P=0.6; size of belly: r=0.047, P=0.56), and there were positive correlations between the mothers' spiritual health scores (heart beats: r=-0.034, P=0.66; percentage of saturated oxygen: r=-0.034, P=0.90; degree of heat: r=0.047, P=0.96). However, none of these correlations were statistically significant.

Conclusion: In general, the results of this study showed that most of the mothers had a normal and high level of spiritual health, but a higher percentage of moderate level of spiritual health was observed in mothers, compared to those of other levels. Moreover, no significant correlations were found between mothers' spiritual health scores with newborns' physical development indices and other physiologic factors.

Keywords: Mothers, Newborns, Physical development indices, Physiologic indices, Spiritual health

Introduction

Pregnancy brings about both physical and mental changes in women (1). The periods of pregnancy, childbirth, and postchildbirth are very important in a women's life cycle, and these experiences can affect mothers, children, and fathers as well (2). Pregnancy can be one of the most stressing and turbulent periods for women.

Women might be mainly concerned about whether they would make good moms, they can give birth to healthy children, and how the family would afford extra expenses. Parents' mental status, mental health, economic status during pregnancy, and most importantly, women's mental condition and environment influence the

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baby's spirit. It means that if the mother faces problems and psychological distress, she might suffer from unfavorable consequences of pregnancy, such as vomiting, nausea, babies' abnormal weight, preterm birth, and infancy putrefaction (3).

The ever-growing importance of spirituality and spiritual health in human beings has attracted psychologists' and mental health experts' attention over the last decades. Developments in psychology are increasingly expanding, and dynamic societies of contemporary world have led to larger emphasis on spiritual expectations and assigned more significance to this type of needs rather than human material needs (4).

Using mental and religious health is an important strategy to overcome stress. Over several decades, health has been defined based on multiple dimensions (i.e., physical, mental, and social), but Russel's and Osman' recommendation for adding spiritual health as a new dimension to people's health and humans' life has opened up a new window in health theories (5). Some even believe that the lack of spiritual health might impair other aspects of human health, and achieving a high level of health would be impossible without spiritual health (6).

It is very difficult to define spiritual health. Undoubtedly, spiritual health is not just limited to the effects of prayers and other religious revolutions in patients or any other alternatives for common medical treatments (4). However, in a comprehensive definition, we can say that spiritual health refers to a person's feeling of being accepted, positive feelings, ethics, as well as mutual feeling and communication, embedded in a powerful sacred atmosphere to be achieved in a dynamic and consistent cognitive-emotional action process (7).

Various studies have focused on the effects and different aspects of spiritual values on human health. Ravanipour et al. reported that the women who gave birth to a healthy child enjoyed a higher level of spiritual health than women whose babies were diagnosed with a chronic disease (8). Tajvidi recognized the importance of spiritual health as a contributor to raising the mothers' and babies' health (9). Callister et al. reported that most women had a higher level of spiritual health when giving birth to their children (10). In most societies, including our society (i.e., Iran), mothers are playing a much more highlighted role in raising their children (11); therefore, their spiritual health is considered an important factor

in predicting human health (12).

Though spiritual health is an important factor in motherhood and affects the babies' health, very few studies have focused on pregnant mothers and effects of spiritual health on their babies. Moreover, most of the earlier studies in other countries and even in Iran were surveys and/or quasi-experimental studies focusing on mothers. However, the connections between the mothers' level of spiritual health and infantile consequences were much less studied. Therefore, this study aimed to determine the relationship between the mothers' spiritual health with babies' physical development indices and some physiologic parameters in the medical center of Hazrat Zeinab affiliated with Shiraz Medical University in Shiraz, Iran.

Methods

This cross-sectional descriptive analytic study was conducted during 2017-2018. The population of this study included all mothers delivering babies at Hazrate Zeinab hospital affiliated to Shiraz University of Medical Sciences, and their babies were included in this study. Out of this population, we selected 155 mothers through the convenient sampling method. We approached this selection with 5% of alpha (i.e., level of confidence coefficient) and 80% of test potentiality. In addition, the level of error was considered 0.05%.

$$n = \frac{z_{1-\frac{\alpha}{2}}^2 \times \sigma^2}{d^2}$$

$$\alpha = 0.05 \rightarrow z_{1-\frac{\alpha}{2}} = 1.96$$

$\sigma^2 \rightarrow virance\ of\ virtual\ health\ score\ in\ primary\ study$

$d = absolute\ error$

The mothers were pregnant with one baby (not twins), and they were pregnant for 38-40 weeks. They had no genetic diseases, and no factors threatened their pregnancy. All the women with primary education were included in the present study. In addition, those women whose children were born using vacuums or forceps and whose babies who were saturated with in vitro fertilization amniotic were excluded from the study.

A checklist containing two sections was used to gather the data. The first section of the scale

included the items on demographic features, such as mother's age, father's age, order of birth, baby's gender, and the other section recorded the baby's physical and physiological indices (e.g., height, weight, size of head, size of belly, heartbeat, number of breaths, amount of oxygen being saturated in the artery, and baby's heat).

Palutzian and Ellison (1982) 20-item scale was used to collect the data related to the mothers' spiritual health. Ten items of this scale address religious health, and 10 other items record the person's existing health. In this regard, the spiritual health score is the sum of these two sections within the range of 20-120. A 6-point Likert scale ranging from strongly disagree to strongly agree was issued in this questionnaire.

In the items 3, 4, 7, 8, 10, 11, 14, 15, 17, 19, and 20, the option of strongly disagree got one score; whereas six scores were assigned to strongly disagree for the items 1, 2, 5, 6, 9, 12, 13, 16, and 18. At the end, the participants' spiritual health was classified into low (20-40), moderate (41-99), and high (100-120). In addition, its Cronbach's alpha coefficient in Iran is 0.82 [13].

After gaining the approval of the Ethics and Spirituality Council of Shiraz University and hospital authorities, we attended the midwifery section of the hospital every day. Those qualified women who had a vaginal delivery and 2 h had passed from their labor entered the study. They had already announced their consent to participate in the study. We completed a checklist containing the mothers' demographic information and babies' physical and physiologic features. Then, the mothers filled out the spiritual health scale.

To fill out the checklist, we firstly measured the baby's height, size of head, and size of belly, and then, measured the pulse and amount of saturated oxygen in the artery by attaching pulse oximeter to the baby's sole. The reliability and validity of this device have already been verified. The babies' number of breaths per minute was measured, and we assessed the degree of heat by putting an auxiliary thermometer in the babies' armpit for 5 min.

Data analysis

To analyze the data, we used SPSS software (version 18) through the independent t-test, Chi-square, variance analysis, one-way multivariate analysis of variance, and Pearson correlation analyses at P=0.5.

Ethical considerations

The research project was approved by the Local Ethics Committee of Shiraz University of Medical Sciences (code: 14609). In addition, written informed consent was obtained from all the participants. The mothers after explaining the goals of the project accepted to participate in the study.

Results

In this study, 155 mothers who gave birth to newborns were examined. The mothers' mean age was 27.83±6.63 years, and their age range was 14-43 years. The fathers' mean age was 33.66±7.85 years, and their age range was 21-70 years. Most mothers' (71.6%) and fathers' (67.1%) educational levels were diploma or under diploma (Table 1). The results of this study showed that the mean of mothers' spiritual health was 77.61±9.31. In this regard, the lowest and highest scores were 60 and 114, respectively. The spiritual health of 151 (97.4%) women was reported as in the average level within the score range of 41-99. Moreover, four (2.6%) women were reported with a high level of spiritual health with a score more than 100.

The results showed that there was no significant difference between the mean score of maternal spiritual health regarding the age (P=0.53) and mothers' jobs (P=0.41), but there was a significant relationship with education in this regard (P=0.022). In the Post hoc test, it was revealed that the difference was between the mothers whose level of education was diploma and those with higher levels of education (P=0.01). Other groups did not show any significant differences in this regard. The results showed that there was no significant difference between the mean score of father's spiritual health regarding the age (P=0.50) and fathers' jobs (P=0.86), but there was a significant relationship with education in this regard (P=0.03).

The results of the Post hoc test showed that there was a statistically significant difference between the mothers whose husbands' level of education was a bachelor's degree and those whose husbands had higher than a bachelor's degree (P=0.01). Other groups did not show any statistically significant differences (Table 1). The mean differences of the babies' belly size based on the mothers' spiritual health score were statistically significant, but this difference in terms of babies' weight, size of head, and mothers' spiritual health scores was not statistically significant.

Additionally, the mean difference of the babies' heartbeat and percentage of oxygen being

Table 1. Differences between mean spiritual health based on mothers' and fathers' age, education, and job

Variable	Subset	Mothers			Fathers		
		Mean	Standard deviation	P-value	Mean	Standard deviation	P-value
Age range (year)	Younger than 20	74.57	10.23		---	----	
	21-25	75.84	11.70		74.57	10.23	
	26-30	75.97	6.64		75.84	11.70	
	31-35	75.20	4.39	0.53	75.97	6.64	0.86
	36-40	77.48	7.05		75.20	4.39	
	Older than 40	74.57	10.23		77.48	7.05	
Job	Employed	76.73	11.50	0.41	75.90	8.81	0.5
	Jobless	75.56	6.90		79.33	5.03	
Educational level	Diploma or under diploma	7672.97	9.21		75.83	6.72	
	Diploma to bachelor's degree	21	2.80	0.022	78.74	13.94	0.03
	Master's degree to higher education	75.95	8.27		72.15	6.14	

Table 2. Mean differences between baby's physical development indices and other physiologic indices based on the mothers' spiritual health rate

Spiritual health		Moderate (Mean±standard deviation)	High (Mean±standard deviation)	P-value
Physical development indices	Height (cm)	50.51±2.93	51.25±1.50	0.61
	Weight (meter)	3.15±0.44	3.07±0.40	0.71
	Size of head (cm)	33.80±1.36	33.75±1.50	0.91
	Size of belly (cm)	32.45±1.54	34.26±1.52	0.02
	Heart beat (beat/min)	139.32±16.66	144±1.41	0.004
	Number of breaths (beat/min)	44.04±14.33	41.50±1.91	0.72
Some physiological indices	Percentage of oxygen being saturated in artery (%)	97.09±2.54	98.25±0.50	0.007
	Degree of body heat	36±4.39	36.55±0.54	0.80

saturated in the arteries based on the mothers' spiritual health score was statistically significant. However, the mean differences of breath number and body heat were not statistically significant among mothers whose spiritual health scores were reported to be moderate and high (Table 2, Figure 1, and Figure 2).

The results of this study showed a reverse linear relationship between the spiritual health with babies' height, weight, head size, and oral health score. However, this relationship was not statistically significant (height: r=0.01, P=0.21; weight: r=0.058, P=0.47; head size: r=0.033, P=0.67; diagrams 1a, 1b, 1c). There was a direct linear relationship between the babies' belly size and spiritual health score (r=0.047); nevertheless, this relationship was not statistically significant (P=0.56; Diagram 1d).

We also observed a direct linear relationship between the babies' heartbeat and spiritual health score (r=0.036), but this relationship was not statistically significant (Diagram 1a; P=0.66). There was a reverse linear relationship between the babies' number of breaths and spiritual health score (r=-0.05). This connection was not statistically significant (Diagram 1b; P=0.49). Moreover, a reverse linear relationship was found between the percentage of oxygen being saturated

and spiritual health score (r=-0.034), but the relationship was not statistically significant (Diagram 1c; P=0.90). There was also a linear and direct relationship between the babies' body heat and spiritual health score (r=0.047); however, this relationship was not statistically significant (P=0.56; Diagram 1d).

Discussion

The results of this study showed that most of the mothers' educational level was under diploma, and most of them were jobless within the age range of 26-30 years. Additionally, most of the babies' fathers had jobs and their educational level was under diploma. Moreover, paternal age group of 26-30 years had the highest frequency. Fuladi et al. reported similar results demonstrating in their study that most of the mothers were within the age range of 25-30 years. In addition, most of them were housewives, and their educational level was below diploma.

Maan et al. showed that most of women were single mothers, and they did not have a high salary (14). This finding was also in line with that of the present study. Avaznejad et al. showed that most of the mothers were jobless and within the age range of 30-40 years. In addition, most of these women's educational level was under diploma,
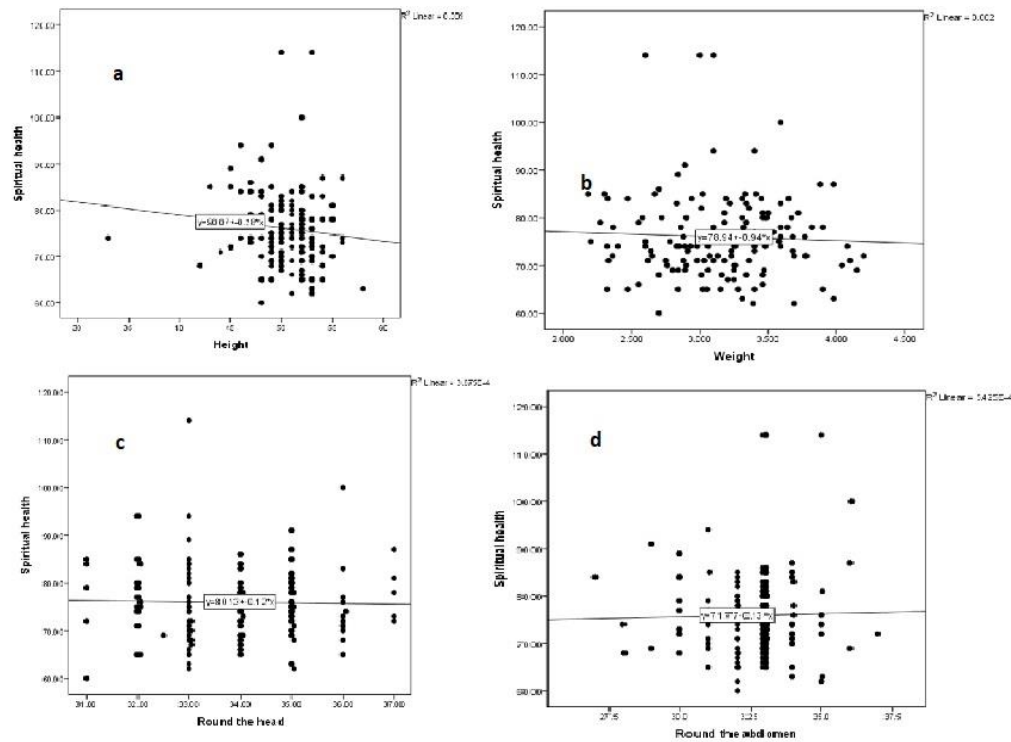
Figure 1. Distribution of babies' height, based on mothers' spiritual health score (a); distribution of babies' weight based on mothers' spiritual health score (b); distribution of babies' head size based on mothers' spiritual health score (c); distribution of babies' belly size based on mothers' spiritual health score (d)
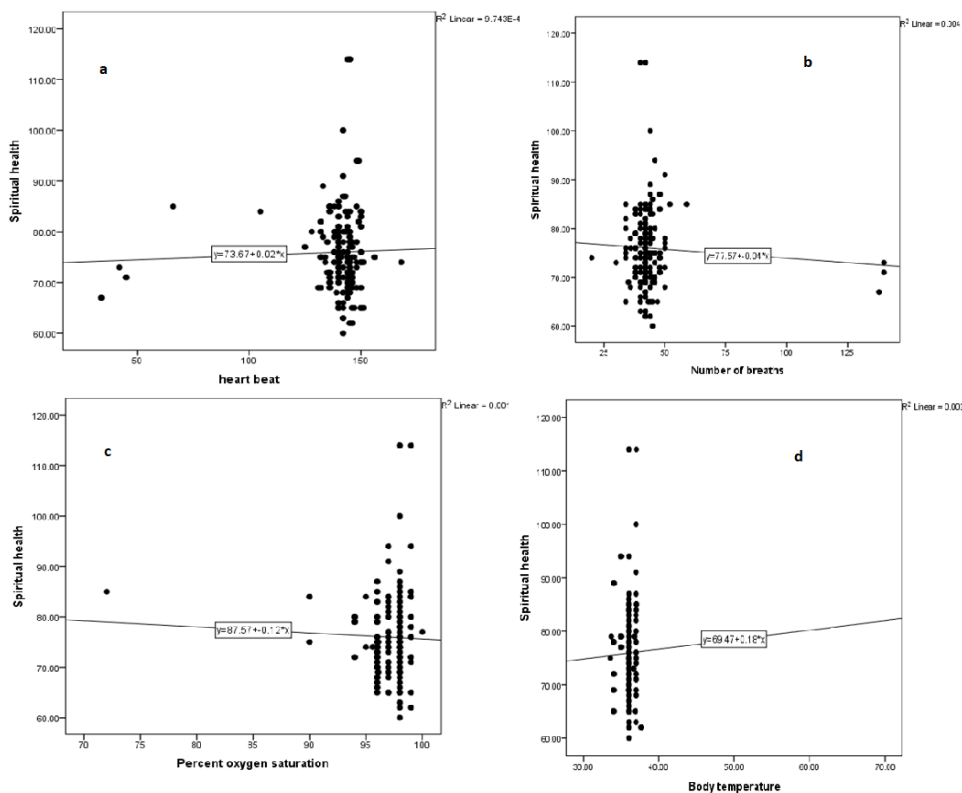

Figure 2. Distribution of babies' heartbeat based on spiritual health score (a); distribution of babies' number of breaths (b); distribution of percentage of oxygen being saturated in babies' head based on spiritual health score (c); distribution of babies' heat based on spiritual health score (d)

and most of the fathers were employed (11).

Kadivar et al. also indicated that most of the mothers were within the age range of 25-30 years, and their level of education was diploma and under that. Furthermore, most of the women were jobless. This is also in line with the results of the current investigation. Moreover, the results of this study showed that all mothers had moderate to high levels of spiritual health among whom the moderate level of spiritual health was higher (97.4% vs. 2.6%) (15).

Vafaei Fooladi et al. showed that most (51%) women had a high level of spiritual health (16). This result was also consistent with those of this study. In a study conducted by Kadivar et al., the mean of spiritual health score of mothers whose babies were in the hospital was 99.33±13.23 (15). Haji Rafiei et al. indicated that most of the pregnant women had a high level of spiritual health, and the rest had normal or intermediate level of spiritual health. This point is also justified on the ground that Iranian women hold strong religious beliefs. This finding is not consistent with that of the current study (17). In the present study, most of the women had a moderate level of spiritual health, and very small percentage of them had a high level of spiritual health.

Narimani et al. found that the mean of spiritual health was 64.64±3.98 for women whose babies were mentally retarded (18). This finding was more in line with the results of this research. Rezaei et al. showed that more than half of healthy women had a moderate and/or high level of spiritual health, and none of them were weak in terms of spiritual health score (19). The results of their study and other studies were consistent with the findings of our study (20-22).

The differences between the findings of other studies might be due to the differences in the background of these studies from cultural contexts. Furthermore, the observed differences in the findings of this study might be due to selecting healthy mothers and babies. Meanwhile, as the babies were newly born, the mothers might be much less emotionally dependent on their babies and feel less emotional dependence that gives rise to less spiritual health score.

However, in other studies, mothers were either sick or babies were not feeling well, and they had to be in hospitals. This shows that people are normally more prone to religious beliefs in critical and difficult moments of life, as religion and belief in the superior power is considered to be an important strategy when coping with unpleasant situations. Broad meanings and deep sensations that people find in Islamic and religious ideas help patients get along with difficulties. Also, the differences in findings might be due to variations in the population of study. As women having higher levels of education showed more willingness to take part in this study, a part of the differences in the mean of spiritual health score was justified through women's education level.

Also, we found no significant relationship between the mothers' spiritual health score and babies' physical and physiologic features (e.g., size of head and size of belly). Haji et al. conducted a study on the relationship between the mothers' psychological profile with babies' size of head and weight. They concluded that pregnant mothers' perceived that sponsorship could affect their babies' physical shape when they were born. Especially, social sponsorship can predict the babies' size of head and weight. There was a slight correlation among the mothers' anxiety and stress with the babies' physical condition, indicating that the correlation was small (r=0.24, r=0.9). This finding was inconsistent with the results of the present study.

Kabiry et al. showed that there was a significant relationship between mothers' mental health and babies' mental health. In addition, there was a relationship between the mothers' mental health with babies' initial weight and his/her weight when the baby was 2 months old (23). However, the aforementioned relationship was not observed in the present study.

Other studies expressed that there was a statistically significant relationship between the mothers' spiritual health and babies' physical health (24). Therefore, mothers' mental depression and/or anxiety in pregnancy could affect the babies' weight and minimize the babies' weight. Furthermore, visiting mothers before delivering the baby could positively affect the process and stop the unpleasant results of labor (25-26). Results of the studies have shown that pregnancy and labor education programs in addition to reducing the mother's anxiety and labor pain affected fetal Apgar score and even maternal attachment to the baby (27-29).

In other studies, it was reported that most of their participants believed in spiritual care to be provided for pregnant women. In addition, two-thirds of the participants expressed that there must be spiritual care for pregnant women. Moreover, assuring the spiritual health of pregnant women and providing clinical care for mothers are necessary (30-31). Carmichael et al., Sable et al., and Williamson et al. pointed to an

indirect and reverse relationship between the mothers' mental distress with the babies' weight, height, and size of the head. This relationship was statistically significant (32-34). This finding is not in line with those of our study as well.

In another study, there was a negative significant relationship between the mothers' mental distress and babies' height (35). Their results are not in line with those of our study. Also, Aslami et al. found that giving instruction based on Islamic thoughts and patterns could help minimize the mothers' anxiety and increase the physical health parameters in babies (36).

The differences we observed between this study and other previous studies might be because of the mothers' self-censorship when it comes to expressing spiritual and mental issues. In the light of this study, we recommended that necessary instructions about pregnancy should be given to the mothers, especially those who are about to give birth to their first baby. This helps the mothers support their babies and prepare everything to raise healthy and happy children.

The small number of participants in this study could be another reason for the lack of relationship between the mothers' spiritual health and their babies' physical development indices. Therefore, one could reach a more vivid understanding of the relationship with a larger population and removing the limitations of the study. A study has shown that mothers more capable of coping with psychosocial stress are more likely to be able to absorb food for the growth of embryo organs, and this can help increase fetal growth (37). Other studies have also emphasized that pregnancy education in addition to the effects of pregnancy can also affect the development of the baby's physical, mental, and motor functions (38-43).

As this study did not show any statistically significant relationship between the mothers' spiritual health with babies' heartbeat, percentage of the oxygen being saturated in the arteries, number of breaths, and degree of heat, we should add that no studies have focused on the mothers' spiritual health score and babies' physical parameters in Iran and/or other countries in the world. Given that, the possibilities of comparing the results of this study with other studies were very limited.

However, Edraki et al. demonstrated that mothers who showed emotional behavior and affection toward their babies minimized the babies' heartbeat per minute and increased the amount of oxygen to be saturated. This finding is not consistent with the results of our study. It seems that serious changes are necessary to bring about baby care as the mothers' spiritual health is growing as an important concern. The nurses must also be trained as far as mental and spiritual health is concerned (44).

The limitations of this study were the small population of the study and lack of tendency on the mothers' part to participate in this study. It is necessary to take some psychological measures to enhance women's health and support them as they are very important and play a remarkably big role in creating the future. It is suggested that medical centers should develop serious plans for this purpose and deal with pregnant women's physical and mental problems. In addition, we recommended performing future studies focusing on qualitative methods to delve into deep layers of health issues and dig into what influences women's spiritual health.

Conclusion

In general, the results of this study showed that most of the mothers had a moderate and/or high level of spiritual health, but the percentage of moderate level of spiritual health was more observed in mothers. Moreover, no statistically significant relationship was reported between the mothers' spiritual health scores with babies' physical and physiologic features.

Acknowledgments

Conflicts of interests

The authors of this study declare that they have no conflict of interests.

References

1. Haji A, Mahmoud Fh, Karimi Q, Abbasi A. The relationship between psychological profile of pregnant women with weight, height and head circumference of infants at birth. J Health Breeze. 2016; 5(1):18-26.
2. Howland LC. Preterm birth: implications for family

stress and coping. Newborn Infant Nurs Rev. 2007; 7(1):14-9.

3. Burke KC, Burke JD, Rae DS, Regier DA. Comparing age at onset of major depression and other psychiatric disorders by birth cohorts in five US community populations. Arch Gen Psychiatry. 1991; 48(9):789-95.

4. Selman L, Harding R, Gysels M, Speck P, Higginson IJ. The measurement of spirituality in palliative care and the content of tools validated cross-culturally: a systematic review. J Pain Symptom Manage. 2011; 41(4):728-53.

5. Cooper KL, Chang E, Sheehan A, Johnson A. The impact of spiritual care education upon preparing undergraduate nursing students to provide spiritual care. Nurse Educ Today. 2013; 33(9):1057-61.

6. Rahimi N, Nouhi E, Nakhaee N. Spiritual well-being and attitude toward spirituality and spiritual care in nursing and midwifery students. Iran J Nurs. 2013; 26(85):55-65.

7. Pickner WJ, Puumala SE, Chaudhary KR, Burgess KM, Payne NR, Kharbanda AB. Emergency department utilization for mental health in American Indian children. J Pediatr. 2016; 174:226-31.e3.

8. Jadidi A, Farahaninia M, Janmohammadi S, Haghani H. Spiritual well being of elderly people resident in nursing home. J Geriatr Nurs. 2015; 1(2):22-30.

9. Tajvidi M, Dehghan Nayeri N. Experiencing spirituality in pregnancy: a phenomenological study. J Urmia Nurs Midwifery Facul. 2016; 14(8):674-81.

10. Callister LC, Khalaf I. Spirituality in childbearing women. J Perinat Educ. 2010; 19(2):16-24.

11. Avaznejad N, Ravanipour M, Bahreyni M, Motamed N. Comparison of spiritual health in mothers with healthy children and mothers of children with chronic disease in Kerman 2015-2016. Nurs Vulnerables. 2016; 3(8):13-25.

12. Burkhardt MA, Nagai-Jacobson MG. Spirituality: living our connectedness. Massachusetts: Cengage Learning; 2002.

13. Sayyed Fatemi N, Rezai M, Givari A, Hosseini F. Impact of prayer on spiritual health of patients with cancer. Payesh. 2006; 5(4):295-304.

14. Mann JR, Mannan J, Quiñones LA, Palmer AA, Torres M. Religion, spirituality, social support, and perceived stress in pregnant and postpartum Hispanic women. J Obstet Gynecol Neonatal Nurs. 2010; 39(6):645-57.

15. Kadivar M, Seyedfatemi N, Jeshvaghanee SS, Cheraghi MA, Haghani H. Exploring the relationship between spiritual well-being and stress and coping strategies in the mothers of infants hospitalized in the neonatal intensive care units. Daneshvar Med. 2015; 22(118):67-76.

16. Vafaei Fooladi A, Rassouli M, Yaghmaie F, Shakeri N. Assessing correlation between spiritual wellbeing and stress of mothers of hospitalized newborns in neonatal intensive care units. Iran J Nurs. 2015; 28(95):54-62.

17. Haji Rafiei E, Tork Zahrani S, Alavi Majd H, Nayebi Nia As. Spiritual health and its related factors in pregnant women presenting to health centers In Qazvin, Iran, In 2015. J Nurs Midwifery Urmia Univ Med Sci. 2018; 16(4):225-33.

18. Narimani M, Rostami M. Role of religious attitudes, spiritual well-being and social support in predicting the life satisfaction in mothers of mental retardation children. Islam Health J. 2014; 1(3):41-9.

19. Rezaei M, Adib-Hajbaghery M, Seyedfatemi N, Hoseini F. Prayer in Iranian cancer patients undergoing chemotherapy. Complement Ther Clin Prac. 2008; 14(2):90-7.

20. Domar AD, Penzias A, Dusek JA, Magna A, Merarim D, Nielsen B, et al. The stress and distress of infertility: does religion help women cope? Sex Reprod Menopause. 2005; 3(2):45-51.

21. McCoubrie RC, Davies AN. Is there a correlation between spirituality and anxiety and depression in patients with advanced cancer? Support Care Cancer. 2006; 14(4):379-85.

22. Nelson CJ, Rosenfeld B, Breitbart W, Galietta M. Spirituality, religion, and depression in the terminally ill. Psychosomatics. 2002; 43(3):213-20.

23. Kabiry B, Shahri P, Azarnosh S, Haghighizadeh M, Mirfathi S. The relationship between mother's general health and growth of below-6-month-old infants referred to health centers of west of Ahvaz. Sadra Med Sci J. 2015; 3(3):227-34.

24. Underwood LG, Teresi JA. The daily spiritual experience scale: development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. Ann Behav Med. 2002; 24(1):22-33.

25. Liou SR, Wang P, Cheng CY. Effects of prenatal maternal mental distress on birth outcomes. Women Birth. 2016; 29(4):376-80.

26. Bazrafshan MR, Rad AM. The effect of pregnant women's anxiety on apgar score and birth weight of newborns (2009). Sci J Hamadan Nurs Midwifery Facul. 2009; 17(12):58-68.

27. Dehestani H, Moshfeghy Z, Ghodrati F, Akbarzadeh M. The relationship of spiritual health and mother's forgiveness with her anxiety in the labor of the pregnant women. Int J Womens Health Reprod Sci. 2018; 7(2):174-9.

28. Akbarzadeh M, Masoudi Z, Zare N, Vaziri F. Comparison of the effects of doula supportive care and acupressure at the BL32 point on the mother's anxiety level and delivery outcome. Iran J Nurs Midwifery Res. 2015; 20(2):239.

29. Akbarzadeh M, Masoudi Z, Hadianfard MJ, Kasraeian M, Zare N. Comparison of the effects of maternal supportive care and acupressure (BL32 acupoint) on pregnant women's pain intensity and delivery outcome. J Pregnancy. 2014; 2014:129208.

30. Adanikin AI, Onwudiegwu U, Akintayo AA. Reshaping maternal services in Nigeria: any need for spiritual care? BMC Pregnancy Childbirth. 2014; 14(1):196.

31. Abiodun OA, Adetoro OO, Ogunbode OO. Psychiatric morbidity in a pregnant population in Nigeria. Gen

Hosp Psychiatry. 1993; 15(2):125-8.

32. Carmichael SL, Shaw GM, Yang W, Abrams B, Lammer EJ. Maternal stressful life events and risks of birth defects. Epidemiology. 2007; 18(3):356-61.

33. Sable MR, Wilkinson DS. Impact of perceived stress, major life events and pregnancy attitudes on low birth weight. Fam Plann Perspect. 2000; 32(6):288-94.

34. Williamson JH, LeFevre M. Tangible assistance: a simple measure of social support predicts pregnancy outcome. Fam Pract Res J. 1992; 12(3):289-95.

35. Hasanjanzadeh P, Faramarzi M. Relationship between maternal general and specific-pregnancy stress, anxiety, and depressionsymptoms and pregnancy outcome. J Clin Diagn Res. 2017; 11(4):VC04-7.

36. Aslami E, Alipour A, Aghayusefi A, Najib F. Assessing the effectiveness of mindfulness-based islamic– spiritual schemas on anxiety of mothers pregnancy and infants physiological health. J Health Psychol. 2015; 4(14):5-16.

37. Toosi M, Akbarzadeh M, Zare N, Sharif F. The role of relaxation training in health index of infants in pregnant mothers. J Jahrom Univ Med Sci. 2013; 11(1):14.

38. Akbarzadeh M, Dokuhaki S, Joker A, Pishva N, Zared N. Teaching attachment behaviors to pregnant women: a randomized controlled trial of effects on infant mental health from birth to the age of three months. Ann Saudi Med. 2016; 36(3):175-83.

39. Dokuhaki A, Akbarzadeh M, Pishva N, Zare N. A study of the effect of training pregnant women about attachment skills on infants motor development indices at birth to four months. Fam Med Prim Care Rev. 2017; 19(2):114-22.

40. Dokuhaki S, Heidary M, Akbarzadeh M. Investigation of the effect of training attachment behaviors to pregnant mothers on some physical indicators of their infants from birth to three months based on the separation of male and female infants. Pediatr Neonatol. 2018; 60(3):324-31.

41. Akbarzadeh M , Bahmani N, Moatari M, PourAhmad S, Zare N .The effects of training based on BASNEF model and acupressure at GB21 point on the infants' physical growth indicators. Iran J Neonatol. 2014; 5(4):18-24.

42. Akbarzadeh M, Moattari M, Bahmani N, Bonyadpour B, Pour Ahmad S. Comparison of the effects of educational programs on the development of infants aged 1-3 months based on the BASNEF model and application of acupressure on the GB-21 point. Iran J Neonatol. 2016; 7(2):20.

43. Setodeh S, Sharif F, Akbarzadeh M. The impact of paternal attachment training skills on the extent of maternal neonatal attachment in primiparous women: a clinical trial. Fam Med Prim Care Rev. 2018; 20(1):47-54.

44. Edraki M, Zendeh-Zaban S, Beheshti PN, Hemati F, Haghpanah S. The effect of maternal attachment behaviors program on physiological indicators of preterm infants: a clinical trial. Sadra Med Sci J. 2017; 4(1):1-10.