

Associations among fetal heart rate patterns and mothers' spiritual health and forgiveness

ABSTRACT

Objective: Studies have shown that spiritual commitment and positive personality traits such as forgiveness are considered a factor in effective adaptation to stressful problems and events and stress reduction. This study was to associations among fetal heart rate (FHR) patterns and mothers' spiritual health and forgiveness in women referring to Maternity Hospital Affiliated to Shiraz University of Medical Sciences.

Materials and Methods: This study is a correlational study, which was performed on pregnant women referring to selected hospitals with a sample size of 200 pregnant mothers in 2016. After receiving written consent from qualified individuals, a general information questionnaire, medical history, spiritual health, and forgiveness were recorded. Then, data were analyzed using descriptive statistics (frequency and percentage) and Chi-square test in SPSS software, version 22.

Results: The mean age of the participants was 28.92 years, with a gestational age of 37–31 weeks. The mean spiritual health was 102.64 (14.61) and 133.2 (16.99). 31.5% of mothers' spiritual health was average, 68.5% their spiritual health was estimated to be high. Twenty-five percent had a moderate level of forgiveness and 75% had a high level of forgiveness. According to the Chi-square test, there is a significant relationship between spiritual health and forgiveness with normal FHR patterns ($P = 0.001$).

Conclusion: The majority of pregnant women had a high score of spiritual health and forgiveness, and there was a statistically significant relationship with the normal FHR. It is suggested that implementing a spirituality-based care program that promotes spirituality and positive personality traits can be a good way to reduce maternal anxiety and regular FHR.

Keywords: Fetal heart rate, forgiveness, health, intrapartum, pattern, spiritual

INTRODUCTION

Pregnancy, delivery, and the postpartum period are a turning point in life. This experience profoundly affects women, children, fathers, and families, whereas it has a significant and long-term impact on society. Mood changes during pregnancy are considered normal because hormonal changes affect the amount of neurotransmitters and a wide range of possible feelings about motherhood. Everyone responds to these changes in their own way. Some pregnant women experience intense emotions, both good and bad.^[1]

This period is the result of physiological and psychological changes and adaptations that require special attention. In

HANIEH DEHESTANI, ZEINAB MOSHFEGHY¹, SETAREH DERAKHSHANPOUR, MARZIEH AKBARZADEH²

Department of Midwifery, School of Nursing and Midwifery, Shiraz University of Medical Sciences, ²Department of Midwifery, Maternal–Fetal Medicine Research Center, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, ¹Department of Midwifery, Student Research Committee Center, School of Nursing and Midwifery Shahid Beheshti, Shiraz University of Medical Sciences, Tehran, Iran

Address for correspondence: Asst. Prof. Marzieh Akbarzadeh, Department of Midwifery, Maternal–Fetal Medicine Research Center, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran.
E-mail: marzieh.akhbar@gmail.com

Submission: 18-02-2023, **Revision:** 11-06-2023,
Acceptance: 11-12-2023, **Published Online:** 24-08-2024

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Dehestani H, Moshfeghy Z, Derakhshanpour S, Akbarzadeh M. Associations among fetal heart rate patterns and mothers' spiritual health and forgiveness. *J Med Soc* 2024;38:29-36.

Access this article online

Website: www.jmedsoc.org	Quick Response Code 
DOI: 10.4103/jms.jms_27_23	

and neonatal health and thereby for improvement of the health of pregnant women.

Acknowledgments

This study was financially supported by the Research Vice-Chancellor of Shiraz University of Medical Sciences (Proposal No. 12362, ethic cod: IR.sums.REC.1395.S717). Hereby, the authors would like to thank Shiraz University of Medical Sciences, Shiraz, Iran, and also the Center for Development of Clinical Research of Nemazee Hospital and Dr. Nasrin Shokrpour for editorial assistance.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Bennett HA, Einarson A, Taddio A, Koren G, Einarson TR. Prevalence of depression during pregnancy: Systematic review. *Obstet Gynecol* 2004;103:698-709.
- van Bussel JC, Spitz B, Demyttenaere K. Women's mental health before, during, and after pregnancy: A population-based controlled cohort study. *Birth* 2006;33:297-302.
- Howard LM, Molyneux E, Dennis CL, Rochat T, Stein A, Milgrom J. Non-psychotic mental disorders in the perinatal period. *The Lancet*. 2014;384:1775-88.
- Stein A, Pearson RM, Goodman SH, Rapa E, Rahman A, McCallum M, et al. Effects of perinatal mental disorders on the fetus and child. *The Lancet*. 2014;384:1800-19
- Howard LM, Khalifeh H. Perinatal mental health: a review of progress and challenges. *World Psychiatry*. 2020;19:313-27.
- Punamäki RL, Repokari L, Vilks S, Poikkeus P, Tiitinen A, Sinkkonen J, et al. Maternal mental health and medical predictors of infant developmental and health problems from pregnancy to one year: Does former infertility matter? *Infant Behav Dev* 2006;29:230-42.
- Martini J, Knappe S, Beesdo-Baum K, Lieb R, Wittchen HU. Anxiety disorders before birth and self-perceived distress during pregnancy: Associations with maternal depression and obstetric, neonatal and early childhood outcomes. *Early Hum Dev* 2010;86:305-10.
- Dolatian M, Mirabzadeh A, Forouzan AS, Sajjadi H, Majd HA, Moafi F, et al. Correlation between self-esteem and perceived stress in pregnancy and ways to coping with stress. *Pajoohandeh J* 2013;18:148-55.
- Beyrami M, Zahmatyar H, Khosroshahi J. Prediction Strategies for coping with stress during pregnancy on components of hardiness and social support in nulliparous pregnant women. *Iran J Nurs Res* 2013;7:1-9.
- Duman NB. Socio-demographic and obstetric factors associated with depression during pregnancy in Turkey. *Am Int J Contemp Res* 2012;2:17-26.
- Dako-Gyeke P, Aikins M, Aryeetey R, McCough L, Adongo PB. The influence of socio-cultural interpretations of pregnancy threats on health-seeking behavior among pregnant women in urban Accra, Ghana. *BMC Pregnancy Childbirth*. 2013;13:211. doi:10.1186/1471-2393-13-211.
- Kotecha P, Patel S, Shah S, Katara P, Madan G. Health seeking behavior and utilization of health services by pregnant mothers in Vadodara slums. *Healthline*. 2012;3:30-2.
- Oni O, Harville E, Xiong X, Buekens P. Relationships among stress coping styles and pregnancy complications among women exposed to Hurricane Katrina. *J Obstet Gynecol Neonatal Nurs* 2015;44:256-67.
- Puente CP, Morales DM, Monge FJ. Religious coping and locus of control in normal pregnancy: Moderating effects between pregnancy worries and mental health. *J Relig Health* 2015;54:1598-611.
- Ghaleghasemi T, Musarezaie A, Moeini M. Survey of relationship between spiritual wellbeing with anxiety and some demographic variables in patients with coronary artery disease. *J Health Syst Res* 2013;9:702-11.
- 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;33:1057-61.
- Tajvidi M, Dehghan-Nayeri N. Experiencing spirituality in pregnancy: A phenomenological study. *Nurs Midwifery J* 2016;14:674-81.
- Callister LC, Khalaf I. Spirituality in childbearing women. *J Perinat Educ* 2010;19:16-24.
- Wong KF, Yau SY. Nurses' experiences in spirituality and spiritual care in Hong Kong. *Appl Nurs Res* 2010;23:242-4.
- Dolatian M, Mahmoodi Z, Dilgony T, Shams J, Zaeri F. The structural model of spirituality and psychological well-being for pregnancy-specific stress. *J Relig Health* 2017;56:2267-75.
- 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;39:645-57.
- Rahimnejad A, Davati A, Garshasbi A. Relation between spiritual health and anxiety in pregnant women referred to Shaheed Mostafa Khomeini hospital in 2018. *Daneshvar Med Basic Clin Res J* 2020;27:11-8.
- Masoudi Z, Akbarzadeh M, Vaziri F, Zare N, Ramzi M. The effects of decreasing maternal anxiety on fetal oxygenation and nucleated red blood cells count in the cord blood. *Iran J Pediatr* 2014;24:285-92.
- Akbarzadeh M, Masoudi Z, Zare N, Kasraeian M. Comparison of the effects of maternal supportive care and acupressure (at BL32 Acupoint) on labor length and infant's Apgar score. *Glob J Health Sci* 2015;8:236-44.
- Torkestani F, Zafarghndi N, Hadavand S, Zaery F. Umbilical nucleated red blood cell as a sign of fetal distress. *Tehran Univ Med J TUMS Publ* 2008;66:29-33.
- Pargament K. *The Psychology of Religion and Coping*. New York: Guilford; 1997.
- Elahi-Ghomsheie M. *Holy Quran with Persian Translation, Explanation and Searching the Explanation*. Tehran: Marvi Publication; 1993.
- Lin WF, Mack D, Enright RD, Krahn D, Baskin TW. Effects of forgiveness therapy on anger, mood, and vulnerability to substance use among inpatient substance-dependent clients. *J Consult Clin Psychol* 2004;72:1114-21.
- Rye MS, Pargament KI, Pan W, Yingling DW, Shogren KA, Ito M. Can group interventions facilitate forgiveness of an ex-spouse? A randomized clinical trial. *J Consult Clin Psychol* 2005;73:880-92.
- DiBlasio FA, Benda BB. Forgiveness intervention with married couples: Two empirical analyses. *J Psychol Christ* 2008;27:150.
- Enright R, Baskin T, Klatt J. School-based forgiveness education for the management of trait anger in early adolescence. *J Res Educ* 2008;18:16-27.
- Dehestani H, Moshfeghy Z, Ghodrati F. The relationship of mother's spiritual well-being and forgiveness with mother-to-infant attachment in women referring to maternity hospital affiliated to Shiraz University of medical sciences. *Curr Womens Health Rev* 2020;16:116-22.
- Heydarzadegan A, Koochakzaei M. Study of the relationship between spiritual well-being and self-efficacy of students of faculty of engineering and psychology and educational sciences. *Iranian Journal of Engineering Education*, 2015; 17: 79-93. doi: 10.22047/ijee.2015.8012.
- Hargrave TD, Sells JN. The development of a forgiveness scale. *J Marital Fam Ther* 1997;23:41-63.
- Bahari F, Seif S. Forgiveness: A model of family therapy and marriage counseling. *News Res Consult* 2003;2:49-66.
- Makino I, Matsuda Y, Yoneyama M, Hirasawa K, Takagi K, Ohta H, et al. Effect of maternal stress on fetal heart rate assessed by vibroacoustic