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Factors Effective on Safe Childbirth Behavior based on the Health Promotion Model in Pregnant Afghan Refugees in Iran

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Abstract

Background: Safe childbirth is a health concern among refugees. This study was conducted to determine factors which influence safe delivery among Pregnant Afghan Refugees (PAR) based on the Health Promotion Model (HPM).

Methods: This descriptive and analytical cross-sectional study included 160 pregnant Afghan refugees living in Sirjan, a city in Kerman, Iran. The data were collected using a 45-item questionnaire in three parts (demographic information, constructs of Pender's HPM, and safe childbirth behavior questions). After data collection, all data were analyzed by SPSS19, through descriptive statistics and linear regression.

Results: Health promotion model constructs (perceived self-efficacy, perceived barriers, perceived benefits, perceived social support, and interpersonal norms) had direct and significant effects on promoting safe childbirth behavior (P<0.05), and perceived social support was the most influential factor.

Conclusion: Strengthening health-promoting behaviors including perceived social support, perceived self-efficacy, perceived barriers, interpersonal norms, and perceived benefits can help improve safe delivery among Pregnant Afghan Refugees (PARs) in Iran.

Keywords: Health Promotion, Behavior, Pregnant, Refugees

Background

Immigration is an international phenomenon and is one of the social factors that can compromise the health of pregnant women and their fetus and may cause irreparable complications. Iran has hosted the largest refugee population in the world after the 1979 revolution. In 2001, there were approximately 2.5 million Afghan refugees living in Iran. In the past, female family members attended and supported women during labor. However, in

hospitals, continuous support during labor has become the exception rather than the rule (1). The mortality rates of newborns and mothers due to pregnancy complications are important health indicators in world societies (2). These indicators are directly related to childbirth conditions. Advanced management of pregnancy and childbirth complications is generally only available at hospital level (3). The higher the rate of insanitary delivery outside hospitals, the higher neonatal and maternal mortality and neonatal tetanus infection rates (4).

A lot of effort has been made to reduce neonatal and maternal mortality rates and reach the World Health Organization (WHO) goals in Iran. Besides, a number of maternal and obstetrics units have been built in different parts of the country. However, many Afghan refugees do not use these centers, and childbirth at home is very common among them (5). Although there are equipped maternity wards and obstetricians in Iran, 67% of Afghan refugees give birth to their children at home, in unsanitary conditions, and by non-specialists. While in developed countries the rate of childbirth at home is only 1% (6), in some developing countries, this rate reaches 50% or even more (7). Kruk et al showed that in Africa, basic maternal care functions in health facilities provide better obstetric care (8).

Various reasons have been mentioned for childbirth at home including the high cost of hospitals, spouse's unwillingness, wrong beliefs, more emotional support for the mother in her home, and fear of cesarean section (9). Therefore, identification of factors and interventions that can decrease home delivery in developing countries is necessary. Educational interventions may be able to decrease unsafe home deliveries.

The design and effectiveness of educational interventions depend on the appropriate use of behavioral science theories. The value of any intervention depends on its effect and the change it can cause in health behaviors (10). Researchers and scholars have used models and theories to change behaviors (11). Models identify the main factors that affect behavior, specify the relations between these factors, and try to explain the condition and time of occurrence of these relations (12).

One of the comprehensive and predictive models that has been used to study health promotion behaviors and has also been utilized as a theoretical framework to explore the

factors effective in creating these behaviors is the Pender's Health Promotion Model (HPM) (13).

In this model, the concepts determining health promotion behaviors include: 1) individual experiences and characteristics, 2) behavior-specific cognitions and affect, and 3) behavioral outcomes. Individual experiences and characteristics influence people's behavior directly or indirectly through recognition and emotions, and are also related to previous behaviors and personal factors (13). Cognition and particular emotions directly influence behavior and include constructs such as benefits, barriers, self-efficacy, emotions associated with the behavior, interpersonal influences, and situational influences. Pender has identified the constructs of the model that were effective in explaining the behavior in some studies. The constructs included personal factors, perceived health status, perceived benefits, perceived barriers, perceived self-efficacy, and interpersonal influences or social support (14).

In this respect, the study by Maglione and Hayman about physical activity in low-income students showed that people who have more social support, self-efficacy, and commitment in planning, have more physical activity (15). Another study by Vahedian et al. on improving health promotion showed that perceived self-efficacy is the most important factor in determining health promoting behaviors, and perceived religious support is directly and indirectly effective on health promoting behaviors through its influence on perceived self-efficacy, perceived benefits, perceived barriers, and perceived importance (16). Moreover, the study by Kurnia et al on type 2 diabetic patients in Indonesia showed that the significant predictors of diabetes self-management were treatment, perceived self-efficacy, and situational influences (17).

In most parts of the world, home delivery rate in unsanitary conditions is high in immigrant populations due to different reasons (6). This rate is high among Afghan refugees in Iran as well, but there has been no study so far about the factors affecting safe childbirth in this population. Therefore, this study aimed to determine the factors effective on safe childbirth behavior based on the Health Promotion Model in pregnant Afghan refugees

in Iran.

Methods

The present study was a descriptive and analytical cross-sectional one conducted on female Afghan refugees living in Sirjan, a city in Kerman, Iran in 2019.

The sample size was estimated according to a pilot study, in which the correlation between HPM constructs and behaviors for promoting safe childbirth was estimated to be at least 0.4. Therefore, by assuming α-error = 0.01 and β-error = 0.1, the minimum sample size was calculated to be 160.

After listing the health centers (urban and rural), two urban centers and two rural centers were randomly selected for this study. Then, from among the eligible individuals, 160 participants were randomly selected.

The inclusion criteria were having Afghan nationality, being in the 3rd to 5th month of pregnancy, consenting to participate in the study, and living in Sirjan. The exclusion criterion was unwillingness to participate in the study.

The purpose of the study and confidentiality of information were explained to all participants before the start of the study. All participants consented to participate in this study. The majority of the participants were illiterate and unable to complete the questionnaire and trained personnel had to read the questions and write the answers. The questionnaires were completed in the health centers.

The questionnaire included three parts. The first part collected demographic information through five questions about age, education, occupation, number of pregnancies, and place of residence. The second part was about the constructs of Pender's HPM. This section included 7 questions about perceived benefits, 7 questions about perceived barriers, 7 questions about perceived self-efficacy, 6 questions about perceived interpersonal norms, and 6 questions about perceived social support. The third part of the questionnaire was about safe childbirth behavior and included 7 questions about safe childbirth behavior.

The items were scored on a 3-point Likert scale (3 = agree, 2 = no idea, 1 = disagree). The scores for perceived benefits, perceived barriers, perceived self-efficacy, and safe childbirth

behavior ranged from 7 to 21, and for perceived interpersonal norms and perceived social support from 6 to 18.

To achieve content validity, initially, available studies and questionnaires in this field were reviewed and a preliminary draft was prepared accordingly. Then, the questionnaire was sent to health education specialists and experts. The next version was prepared after receiving comments about the necessity of the questions, their relevance with the subject, and their understandability and clarity. Ambiguous questions were corrected with help from some Afghan women. Some complicated irrelevant expressions, and obscure questions were omitted and other phrases were replaced. The test-retest method was used to determine the reliability of the questionnaire, at a time interval of 2 weeks on 30 pregnant Afghan women who did not participate in the study. The correlation coefficient (r) was 0.72 for behaviors promoting safe childbirth, 0.73 for perceived benefits, 0.80 for perceived barriers, 0.75 for perceived self-efficacy, 0.83 for perceived interpersonal norms, and 0.79 for perceived social support.

This study was approved by the Ethics Committee of Kerman University of Medical Sciences (Ethics code: IR.KMU.REC.1396.11). The aim of the study was clarified for the participants and informed consent was obtained from all participants.

Before statistical analysis, the normality of the distribution of quantitative variables was checked by the Kolmogorov–Smirnov test. Data were analyzed using SPSS software version 19 (IBM, Armonk, NY, USA). Descriptive statistics (frequency and percentage) were also reported. Correlation and linear regression coefficients were calculated. The significance level was set at $p < 0.05$.

Results

A total of 160 PARs participated in this study. Their mean age was 24.83± 9.43. All women under study were housewives. Most women (52%) were living in rural areas. Moreover, 20% of them were in their first pregnancy and the rest were in their second or more pregnancy.

The mean score of health promotion behaviors was 11.34±6.43. The mean scores of the HPM constructs are shown in Table 1.

Table 1. Mean and standard deviation (SD) of HPM construct scores among pregnant Afghan women

Variable	Perceived interpersonal norms	Perceived social support	Perceived self-efficacy	Perceived barriers	Perceived benefits	Safe childbirth behavior
Mean ±SD	6.091±11.270	5.874±14.413	8.960±12.21	6.122±12.652	7.156±10.983	6.431±11.341

Pearson correlation coefficients between perceived social support (r = 0.61), perceived interpersonal norms (r=0.42), perceived benefits (r=0.40), perceived barriers (r=0.48), and perceived self-efficacy (r = 0.45) and safe childbirth behaviors were all significant (p-value <0.01). Perceived social support showed the highest correlation with safe childbirth behaviors and perceived benefits showed the lowest correlation.

To determine the predictive factors for safe childbirth behaviors, demographic variables and constructs were entered into the regression model. In this model, perceived benefits, perceived barriers, perceived self-efficacy, perceived social support, and perceived interpersonal norms constructs had a direct effect on safe childbirth behavior and these factors explained 67.8% of the variance of safe childbirth behavior (R² = 67.8%). Other constructs as well as demographic variables did not have a significant effect on safe childbirth behaviors (Table 2).

Table 2. The multivariate linear regression coefficients of HPM constructs and demographic variables predicting safe childbirth behavior

Concepts	Predictive Factors of Health Promotion Behavior		Standardized β	P-value
Constructs	Perceived Benefits		0.417	0.001
	Perceived Barriers		-0.324	0.008
	Perceived Self-Efficacy		0.324	0.007
	Perceived Social Support		1.331	<0.001
	Perceived Interpersonal Norms		0.761	0.005
Demographic variables	Age		-0.067	0.536
	Education	Illiterate	0.468	0.812
		Literate	Ref	
	Job	Housewife	1.187	0.237
		Employed	Ref	
	The number of Pregnancy	First Pregnancy	0.584	0.769
		More than one Pregnancy	Ref	
	Residence	Urban	1.120	0.765
		Rural	Ref	

To determine the indirect effect of demographic variables on health promoting behaviors, the five significant constructs (perceived benefits, perceived barriers, perceived self-efficacy, interpersonal norms, and social support) were entered into separate multivariate regression models as dependent variables and demographic variables were entered as independent variables. Among the five regression models, only in perceived social support, the number of pregnancies was a significant predictor that was directly related to perceived social support (i.e., higher number of pregnancies was associated with more perceived social support), and explained 28.9% of the variance in the perceived social support construct and therefore could possibly affect safe childbirth behaviors.

Discussion

Iran has worked closely with the United Nations (UN) to support Afghan refugees living in Iran (18). Creating an opportunity for a healthy lifestyle among migrants is one of the responsibilities of the health system of the host country, and international cooperation is needed as well. Most Afghan women, due to tradition or false beliefs, prefer to have childbirth at home and do it in unsanitary conditions, which can lead to the death of the mother or the baby. It can also cause serious complications such as neonatal tetanus. This study attempted to help improve this situation by finding some factors related to safe childbirth behavior.

The findings of this study showed that

health promotion behaviors are low in Afghan refugee women. The present study also showed that perceived benefits have a direct impact on the health promotion behavior of Afghan women which was in line with the results of Vakili et al.'s study about dental hygiene (19); as well as those of Lusk et al.'s study about using protective gear among construction workers (20). In all of these studies, perceived benefits were directly related to behavior.

In this study, perceived social support was the most important factor affecting behavior, which reflects the impact of family and friends on accepting safe childbirth behaviors and this requires special attention in designing educational interventions. Hosting populations can provide educational or other necessary (financial and supportive) benefits to improve mother and childbirth health among refugees. The findings of this study are similar to the results of the study by Mohamadian et al. on adolescent girls and those of the study by Tang et al on caregivers of patients with a stroke. The results of their research indicated a direct and positive relation between perceived social support and health promoting behaviors, healthy life styles, and quality of life (21, 22). However, in the study conducted by Esperat et al on pregnant women, social support was not a significant predictor of health promoting behaviors (23).

In the present study, perceived self-efficacy had a direct effect on health promoting behaviors which was similar to the results of the study by Norouzi et al on physical activity in diabetic women (24) and those of the study by Morowatisharifabad et al. on students' dental hygiene (25).

In the present study, perceived barriers showed a significant correlation with health promoting behaviors as well, and these results are in line with the results of the study by Thanavaro et al determining the health promotion behaviors of women with chest pain (26). Nevertheless, the study by Ma et al. showed perceived barriers play no direct or

indirect role in physical activity (27).

Furthermore, no direct relation was detected between personal factors and health promoting behaviors in the present study which is similar to the results of numerous studies (28, 29). However, a study in Iran showed that personal factors had a significant and direct effect on health-related behaviors in diabetic patients (30).

According to this study and its findings, it is recommended that proper educational programs be designed for PARs based on the health promotion model to prevent home childbirth in unsanitary conditions. Raising the level of health literacy of individuals can play a great role in promoting the health of individuals and the society (31).

Despite the novelty of this study, it had a few limitations. First, there is the possibility of false responses, which researchers tried to decrease by assuring participants about confidentiality. The other limitation was the lack of a similar study on pregnant women, which made it difficult to compare the findings of this study with similar studies.

Conclusion

Health promoting behaviors were low in Pregnant Afghan Refugees (PARs) and they had an unsatisfactory situation. Perceived social support was the most influential factor on health promoting behaviors. Taking this factor into account and enhancing health-promoting behaviors (perceived benefits, perceived barriers, perceived self-efficacy, perceived social support, and perceived interpersonal norms) through education can help improve safe delivery and reduce mortality among PARs in Iran.

Acknowledgments

Conflict of interest

The authors reported no conflict of interest.

References

1. Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. Cochrane Database Syst Rev. 2017; 7(7): CD003766. doi: 10.1002/14651858.CD003766.pub6.

2. Johansson S, Villamor E, Altman M, Bonamy AK, Granath F, Cnattingius S. Maternal overweight and obesity in early pregnancy and risk of infant mortality: A population based cohort study in Sweden. BMJ. 2014; 349:g6572. doi: 10.1136/bmj.g6572.

3. Fogliati P, Straneo M, Mangi S, Azzimonti G, Kisika F, Putoto G. A new use for an old tool: maternity waiting homes to improve equity in rural childbirth care. Results from a cross-sectional hospital and community survey in Tanzania. Health Policy Plan. 2017; 32(10):1354-60. doi: 10.1093/heapol/czx100.

4. Miller S, Lalonde A. The global epidemic of abuse and disrespect during childbirth: History, evidence, interventions, and FIGO's mother-baby friendly birthing facilities initiative. Int J Gynaecol Obstet. 2015; 131 Suppl 1:S49-52. doi: 10.1016/j.ijgo.2015.02.005.

5. Odent M. Planned home birth in industrialized countries: World Health Organization, Regional Office for Europe; 1992.

6. Sadeghi R, Shamsi M, Hesary FB, Momenabadi V. Effect of educational intervention based on health promotion model (HPM) on promoting behavior in safe delivery among Afghani pregnant women refugees in Sirjan, Iran. Biosci Biotechnol Res Commun. 2017; 10(3):398-403. doi: 10.21786/bbrc/10.3/10.

7. Gloyd S, Floriano F, Midwife MS, Chadreque MA, Nyangezi JM, Platas A. Impact of traditional birth attendant training in Mozambique: A controlled study. The Journal of Midwifery & Women's Health. J Midwifery Womens Health. 2001; 46(4):210-6. doi: 10.1016/s1526-9523(01)00142-8.

8. Kruk ME, Leslie HH, Verguet S, Mbaruku GM, Adanu RM, Langer A. Quality of basic maternal care functions in health facilities of five African countries: An analysis of national health system surveys. Lancet Glob Health. 2016; 4(11):e845-e55. doi: 10.1016/S2214-109X(16)30180-2.

9. Abed Saeedi Z, Ghazi Tabatabaie M, Moudi Z, Vedadhir AA, Navidian A. Childbirth at home: A qualitative study exploring perceptions of risk and risk management among Baloch women in Iran. Midwifery. 2013; 29(1):44-52. doi: 10.1016/j.midw.2011.11.001.

10. Sadeghi R, Khanjani N, Naghibzadeh Tahami A, Kakolaki ZK. Education of Iranian pregnant women about prevention of influenza A. International Journal of Women's Health and Reproduction Sciences. 2018; 6(3):321-7. doi: 10.15296/ijwhr.2018.53.

11. Glanz K. Health behavior and health education: Theory, research, and practice. California: Jossey-Bass; 2008.

12. Hashemi M, Sadeghi R, Shamsi M. An investigation of educational intervention impact on pregnant women for promote preventive behaviors of influenza H1N1: Using health belief model. Koomesh. 2017; 19(3):603-10.

13. Pender NJ. Health promotion model manual; 2011. Available from: https://hdl.handle.net/2027.42/85350.

14. Srof BJ, Velsor Friedrich B. Health promotion in adolescents: A review of Pender's health promotion model. Nurs Sci Q. 2006; 19(4):366-73. doi: 10.1177/0894318406292831.

15. Maglione JL, Hayman LL. Correlates of physical activity in low income college students. Res Nurs Health. 2009; 32(6):634-46. doi: 10.1002/nur.20353.

16. Vahedian Shahroodi M, Amin Shokravi F, Hidarnia A, Jabbari Nooghabid H. A survey on the effects of the pender's health promotion model on prediction of the employees' physical activity. Health Educ Health Promot. 2013; 1(1):51-66.

17. Kurnia AD, Amatayakul A, Karuncharernpanit S. Predictors of diabetes self-management among type 2 diabetics in Indonesia: Application theory of the health promotion model. Int J Nurs Sci. 2017; 4(3):260-5. doi: 10.1016/j.ijnss.2017.06.010.

18. Dehghan A, Khanjani N, Zahmatkesh R. The immunization coverage of Afghan children at the health centers supported by the united nation higher commission in Kerman, Iran. J Community Health Res. 2013; 2(2):117-23.

19. Vakili M, Rahaei Z, Nadrian H, YarMohammadi P. Determinants of oral health behaviors among high school students in Shahrekord, Iran based on health promotion model. J Dent Hyg. 2011; 85(1):39-48. PMID: 21396262.

20. Lusk SL, Ronis DL, Hogan MM. Test of the health promotion model as a causal model of construction workers' use of hearing protection. Res Nurs Health. 1997; 20(3):183-94. doi: 10.1002/(sici)1098-240x(199706)20:3<183::aid-nur2>3.0.co;2-e.

21. Mohamadian H, Eftekhar H, Rahimi A, Mohamad HT, Shojaiezade D, Montazeri A. Predicting health-related quality of life by using a health promotion model among Iranian adolescent girls: A structural equation modeling approach. Nurs Health Sci. 2011; 13(2):141-8. doi: 10.1111/j.1442-2018.2011.00591.x.

22. Tang YY, Chen SP. Health promotion behaviors in Chinese family caregivers of patients with stroke. Health Promot Int. 2002; 17(4):329-39. doi: 10.1093/heapro/17.4.329.

23. Esperat C, Feng D, Zhang Y, Owen D. Health behaviors of low-income pregnant minority women. West J Nurs Res. 2007; 29(3):284-300. doi: 10.1177/0193945906295532.

24. Norouzi A, Ghofranipour F, Heydarnia A, Tahmasebi R. Determinants of physical activity based on Health Promotion Model (HPM) in diabetic women of Karaj diabetic institute. Iran South Med J. 2010; 13(1):41-51.

25. Morowatisharifabad MA, Karimzadeh Shirazi K. Determinants of oral health behaviors among preuniversity (12th-grade) students in Yazd (Iran): An application of the health promotion model. Fam Community Health. 2007; 30(4):342-50. doi: 10.1097/01.FCH.0000290546.33328.76.

26. Thanavaro JL, Thanavaro S, Delicath T. Health promotion behaviors in women with chest pain. Heart

Lung. 2010; 39(5):394-403. doi: 10.1016/j.hrtlng.2009. 10.016

27. Ma WF, Lane HY, Laffrey SC. A model testing factors that influence physical activity for Taiwanese adults with anxiety. Res Nurs Health. 2008; 31(5):476-89. doi: 10.1002/nur.20279.

28. Fahey JO, Shenassa E. Understanding and meeting the needs of women in the postpartum period: The

29. perinatal maternal health promotion model. J Midwifery Womens Health. 2013; 58(6):613-21. doi: 10.1111/jmwh.12139.

30. Hosseini M, Ashktorab T, Taghdisi M. Health promotion lifestyle in nursing students: A systematic

review. J Health Promotion Management. 2013; 2(1):66-79.

31. Mohammadi Zeidi I, Alijanzadeh M, Pakpour Hajigha A. Factors predicting oral health-related behaviors in diabetic patients using pender's oral health promotion model. Journal of Isfahan Dental School. 2016; 12(2):183-98.

32. Sadeghi R, Mazloomy Mahmoodabad SS, Khanjani N, Fallahzadeh H, Rezaeian M. The association between health literacy and smoking (Hookah and Cigarette) among the young men in Sirjan, Iran. Journal of Substance Use. 2019; 24(5):546-9. doi: 10.1080/14659891.2019.1620886