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Effect of educational intervention based on health promotion model (HPM) on promoting behavior in safe delivery among Afghani pregnant women refugees in Sirjan, Iran

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ABSTRACT

Health promotion behaviors can promote physical and psychological health in individuals and population, especially in Afghan Pregnant Women. Therefore, this study performed to recognize the Effect of Educational intervention Based on Health Promotion Model (HPM) on promoting behavior in Safe Delivery among Afghan Pregnant Women in Sirjan city, 2016. This was a quasi- experimental study. 120 Pregnant Afghan Women attending health centers in Sirjan city were selected to participate in this study: (60 in intervention group and 60 in control group). The intervention was conducted over two sessions in 60 minutes. Data were collected by a validated and reliable questionnaire (39 questions) before intervention and three months after intervention. Data was analyzed by chi-square, Fisher's exact, paired t-test and independent t-test. The average scores of both groups indicated that health-promoting behavior, perceived self-efficacy, perceived barriers, perceived benefits, perceived social support and interpersonal norms, had no meaningful differences before the intervention. But after education, the average scores of all variables increased meaningfully in the intervention group (P<0.001). But, there was no increase or significant difference in the control group. HPM was effective in educating Afghan Pregnant Women. Therefore, it is suggested that HPM can be used to improve the safe delivery in Afghan women.

INTRODUCTION

Maternal and infant mortality due to complications of pregnancy is a very important health indicator. Whatever the percentage of deliveries in non-sanitary and out-of-hospital increase, the mortality rate of infants and pregnant women and neonatal tetanus infection will increase too (Wax et al., 2010). Great deals of investment have been spent to reduce maternal and infant mortality rate and to reach the World Health Organization goal in the country, and also maternity and childbirth facilities have been built in various parts of Iran (Karyani et al., 2015).

One of the most vulnerable groups in this regard is refugees Afghan pregnant women. Decades of war and internal conflict in Afghanistan has led to migrate a large number of Afghans to neighboring countries, including Iran. One of the problems of these immigrants in Iran is the high rates of non-safe and non-sanitary delivery despite the availability of maternity facilities (Kalafı et al., 2002). Even in the Sirjan city in spite of the existence of maternity and women's specialists and well-equipped midwifery, 67% of Afghan women deliver babies at home in unsanitary conditions and by non-specialists, while this rate of giving birth at home is only 1% in developed countries (Sadeghi et al., 2015b). But in some developing countries, this ratio reaches to 50% or even more (Gloyd et al., 2001).

In the different studies, several reasons have been mentioned for giving birth at home, including high cost of delivery in the hospital, Fear of the hospital, husband's opposition, wrong culture, mother's emotional support at home and fear of cesarean section (Salehi and Pour, 2002).

The changing of this risky behavior in Afghan pregnant women requires proper education. The value of education depends on its Effectiveness and changing or creation of health behaviors, which is possible with the proper use of theories and educational models (Glanz et al., 2008). Theories identify the main factors that had influenced in question behaviors, specify the relationships between these factors, and outline the circumstances, the manner and the time of the occurrence of these relationships. Therefore, theories are useful in identifying the elements that should be considered as the main axis of interventions (Sadeghi et al., 2016). Health Promotion Pender Model is one of the comprehensive and predictive models which is used to study the health promoting behaviors and provides a theoretical framework for discovering affected factors in these behaviors (Pender, 2011).

The determinants of health promotion behaviors concepts in this model include: 1) individual experiences and Characteristics, 2) emotions and behavioral specific cognition, and 3) behavioral outcomes. The concept of individual experiences and Characteristics is a concept that directly or indirectly influences on the behaviors through cognition and behavioral emotions, including personal factors and previous related behaviors. While the concept of cognition and behavioral specific emotions directly influence on the behaviors and include constructs such as perceived benefits and barriers, perceived self-efficacy, behavioral emotions, interpersonal influences, and situational influences (Pender, 2011).

Professor Pender has identified models that have influenced on explanation of behavior in over 50% of the researches, including personal factors (perceived health status), perceived benefits, perceived barriers, perceived self-efficacy and interpersonal influences (Social support) (Pender, 2011).

Several studies have confirmed the effectiveness of this model. In this regard, a study by Morowati Sharifabad et al aimed at optimizing the health promotion model indicated that perceived self-efficacy was the most important determinant of health promotion behaviors and also perceived religious support was directly and indirectly have been effective by influencing on perceived self-efficacy, perceived benefits, perceived barriers, and perceived importance of health promotion behaviors (Morowati et al., 2005). The results of Maglione et al. showed that individuals with higher levels of social support, self-efficacy and with commitment of planning are more physically active (Maglione and Hayman, 2009). Considering the importance of the safe delivery and due to the high rate of delivery at Afghani homes; it seems that a similar study has not done in this regard. Therefore, the present study aimed to investigate the effect of educational intervention using the health promotion model in promoting behavior of Safe delivery among refugees Afghan Pregnant Women in Sirjan city in 2016.

MATERIALS AND METHODS

This quasi- experimental study was conducted in 2016. The research environment was the health centers of Sirjan city and the study population was Afghani pregnant women. Subjects were selected by simple random sampling. The sample size was calculated by using the ratio difference formula by considering the confidence level of 95%, a power of 80%, and about 3/3 differences in score before and after the intervention with a standard deviation of 7 and 52 subjects in per group, but the sample size was finally calculated as 60 subjects with consideration of 10 percentage of possible number of subjects dropping out in each group (Mohammadipour et al., 2015).

The subjects were selected based on the inclusion criteria which were as follows: Afghans, being pregnant in the third up to fifth month and resident of Sirjan city; the exclusion criteria were: without chronic disease such as pregnancy diabetes and high blood pressure, non-residence until the end of pregnancy and unwilling to participate in the study. Data collection tool was a self-administered questionnaire. The questionnaires were set anonymously and encoded and were arranged in three parts. The first part contains the demographic characteristics including 5 questions about age, education, occupation, number of pregnancies, and residence. The second part was related to the evaluation of the structures of the Pender Health Promotion Model. This part contains seven questions for perceived benefits, seven questions of perceived barriers, seven questions of perceived self-efficacy, six questions of perceived interpersonal norms, and six questions of perceived social support structures. The third part was related to the measurement of safe delivery behavior. The questions were scored as follows. questions about perceived benefits, perceived barriers, perceived self-efficacy, interpersonal norms and perceived social support were scored 1-3 by Likert's trilogy scale as agree (score 3) to disagree (score 1), The range of scores for perceived benefits, perceived barriers and perceived self-efficacy were from 7 to 21 and for interpersonal norms and perceived social support was from 6 to 18. Also, the assessments of safe delivery behavior were of yes/no type questions.

In this research the analyzing the validity of the content method was used for the analyzing the validity of the questionnaires. The questionnaire was approved by healthcare professionals to examine the issue's comprehensiveness. The re-test method was also used in the distance of 2 weeks to determine the reliability of the study. The correlation coefficient has calculated between the two-time responses as follows, for perceived benefits, 0.79, perceived barriers, 0. 77, perceived self-efficacy, 0.74, perceived interpersonal norms, 0.84 and perceived social support, 0.81.

The method was as follows the researchers randomly divided subjects into intervention and control groups after the selection them based on inclusion criteria. At first, the pre-test questionnaire was completed by the interviewer, then the education program was conducted for the intervention group. Educational content included the definition of pregnancy, maternity care, and also the benefits of safe delivery.The educational program was conducted for four groups of 15 subjects (60 subjects in intervention group), which consisted of two, one-hour training sessions in a one-month interval that were held in a lecture and group discussion. Also, an individual counseling was held for a pregnant woman and their family. The educational classes were held in health centers and health care homes. After three months of conducting the classes, post-test questionnaires were completed by the researcher for the patients in the intervention and control groups.

The current research has been approved by the Ethics Committee of the Kerman University of medical sciences (ethics code: IR.KMU. REC. 1396.11). All the participants were voluntarily and consciously participated in the study and they were given the assurance that the information has been collected only in order to be used for research and will remain confidential and the written testimonial had been gotten from all of the participants in order to participate in the study. Meanwhile, although the control group was not under educational intervention, but after completing the post-test, educations were provided to them with the same quantity and quality.

Data were analyzed by using Chi-square, Fisher's exact test, independent t-test and paired t-test through SPSS version 16. The significance level was considered less than 0.05.

RESULTS AND DISCUSSION

In this study, 120 participants were randomly divided into two groups, intervention (n = 60) and control (n = 60) then the mean and standard deviation of the ages of subjects in the study and control groups were analyzed and they were respectively 24.83 ± 9.43 and 25.12 ± 9.26 years old. This difference based on independent t-test did not show significant differences in both intervention and control groups (P = 0.426). Also other demographic characteristics of the population did not show any significant differences between the two groups (Table 1).

The results showed that there wasn't any significant difference between the mean scores of perceived benefits, perceived barriers, perceived self-efficacy, interpersonal norms and perceived social support before the intervention in the intervention and control groups, but after the intervention, the differences were significantly clear and Scores were increased (Table 2).

The statistical results showed that in the study group, there was a significant increase between the mean scores of perceived benefits, perceived barriers, perceived self-efficacy, interpersonal norms and perceived social support before and after the intervention, and also the educational intervention was effective (Table 3) .

The results also showed that the safe delivery behavior in the intervention group have increased from 23% to 57% after the educational intervention.

Afghan women carry out childbirth at home and in unhealthy conditions, due to traditional beliefs and misconceptions of them and their followers, which unfortunately can lead to the death of mother or infant and may lead to complications such as neonatal tetanus.

Table 1. Comparing some variables among the refugees Afghan Pregnant Women in Sirjan city in the control and intervention groups

Variable		intervention Group (n= 60) Number (%)	Control Group (n= 60) Number (%)	*p-value
Occupation	Housewife	55 (50.4)	54 (49.6)	0.251
	Employed	5 (45.4)	6 (54.6)	
Pregnancy status	First pregnancy	12 (52.1)	11 (47.9)	0.925
	More than one pregnancy	48 (49.4)	49 (50.6)	
Education	Literate	10 (47.6)	11 (52.4)	0.712
	illiterate	50 (50.5)	49 (49.5)	
Residence	City	28 (49.1)	32 (50.8)	0.283
	Village	29 (50.9)	31 (49.2)	

*Chi-square test

Table 2. The mean scores of refugees Afghan Pregnant Women in Sirjan between the control and intervention groups regarding Safe Delivery before and after the intervention

	Before intervention (n=60)			After intervention (n=60)		
	Intervention group Mean± SD	Control group Mean± SD	p-value*	Intervention group Mean± SD	Control group Mean± SD	p-value*
perceived benefits	12.14±2.21	11.94±1.87	0.212	18.42±0.64	12.02±1.56	<0.001
Perceived barriers	18.82±2.72	18.41±3.09	0.367	14.77±1.46	18.25±3.11	<0.001
perceived self-efficacy	12.94±3.23	12.64±4.37	0.055	17.18±1.39	12.29±3.85	<0.001
interpersonal norms	10.19±2.61	10.71±2.83	0.412	14.21±1.67	11.14±2.78	<0.001
perceived social support	7.24±2.43	7.58±2.67	0.216	14.12±3.73	7.68±2.83	<0.001

*Independent t-test

Table 3. The comparison of the variables. The mean scores of refugees Afghan Pregnant Women in Sirjan between the control and intervention groups regarding Safe Delivery before and after the intervention

	Intervention group (n=60)			Control group (n=60)		
	Before Intervention Mean± SD	After intervention Mean± SD	p-value*	Before Intervention Mean± SD	After intervention Mean± SD	p-value*
perceived benefits	12.14±2.21	18.42±0.64	<0.001	11.94±1.87	12.02±1.56	0.021
Perceived barriers	18.82±2.72	14.77±1.46	<0.001	18.41±3.09	18.25±3.11	0.424
perceived self-efficacy	12.94±3.23	17.18±1.39	<0.001	12.64±4.37	12.29±3.85	0.356
interpersonal norms	10.19±2.61	14.21±1.67	<0.001	10.71±2.83	11.14±2.78	0.172
perceived social support	7.24±2.43	14.12±3.73	<0.001	7.58±2.67	7.68±2.83	0.481

*Paired t-test

Therefore, in order to control this important and fundamental dilemma, we evaluated the relevant training based on the health promotion model to promote safe delivery behavior.The findings showed significant increase in the safe and hygienic delivery of Afghan women from 23% to 57% in Sirjan city.

In the health promotion model, in the intervention group, all of the constructs of the model showed significant differences after the intervention.

In the health promotion model, perceived benefits are as a direct stimulus action of behavior and the adoption of an action to prevent the problem or action on a health behavior are dependent on its perceived benefits (Pender, 2011). The most important perceived benefits of safe delivery of Afghan pregnant women respectively included the baby's health, their health, and the prevention of unwanted childhood complications at home. In the present study, the average of perceived benefits scores of patients in the intervention group has increased significantly than in the control group after the education, which was consistent with the results of similar studies (Morovati, 2007, Leslie et al., 2000, Sadeghi et al., 2014). But the results of the study of Ghaffari et al was inconsistent to the present study and did not indicate an increase in the average score of perceived benefits (Ghafari, 2007).

In the present study, financial problems, lack of medical insurance and lack of access to facilities were respectively the most important obstacles in the target group. The significant reduction in the average score of perceived barriers after educational intervention and inter-sectional collaboration in the health care system indicates that the education has a positive effect on removing the perceived barriers in the intervention group. The studies of Nowroozi et al. (Noroozi et al., 2011) and Karimi et al. (Karimi and Eshrati, 2012), which were conducted with this model, indicate that educational intervention are effective in reducing perceived barriers.

Self-efficacy is referred to a person's confidence to his ability in performing an action (Bandura, 2006). In the present study, the average of self-efficacy score of the experimental group after the intervention was significantly increased, which were consistent with the studies of Morowati et al. (Morowati et al., 2005) and Sadeghi et al. (Sadeghi et al., 2015a), but they contradicted by the findings of Kinsler et al. (Kinsler et al., 2004).

Also, in the study, after the education, the average scores of the interpersonal norms of the intervention group were significantly higher than in the control group, which was consistent with the results of the studies of Chenari et al (Chenary et al., 2013) and Nosratabadi et al (Nosratabadi et al., 2015). In the present study, perceived social support was considered as the

most important determinant of the behavior of delivery at home, which this issue was arisen from the influences of family and relatives on this unhealthy behavior. But after educational sessions for the participants and their relatives, the average score in the intervention group was significantly higher than in the control group, which is consistent with the results of conducted studies with this model (Lusk et al., 1997, Norouzi et al., 2010). According to this research and the findings, it is suggested that a precise educational program should be carried out based on the health promotion model for Afghan pregnant women, their spouses and their relatives, and planners should train them by using individual and group educational methods, in order to solve their financial and health problems, and to prevent the risks of unsafe deliveries at home.

One of the limitations of this study was the problem of Afghan women's language and their accent, which was solved by Afghan inquirer and educator, as well as Unwillingness of some of the women to participate in the study, which it was solved by convincing them through local clerks and Afghan elders. Another limitation of the study was the financial and insurance problems of Afghan women, which it was reduced by interagency co-ordinations.

CONCLUSION

The results of this study indicates the impact of educational intervention based on the health promotion model on increasing the safe delivery of pregnancy in Afghan pregnant women in Sirjan city. education and intervention based on the health promotion model is helpful and effective to enhance awareness, to change the attitude and to adopt preventive behaviors for unsafe delivery at home.

AUTHORS' CONTRIBUTIONS

RS helped design the study, carried out data collection, data analysis, and drafted the manuscript. VM carried out the statistical analysis and interpretation. MS conceived the study, supervised the data collection and analyses, and helped draft the manuscript. BB edited and commented on the final draft. All authors read and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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