

Research Article

How Much Fear Explain Breastfeeding among Iranian Mothers

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ABSTRACT

Breastfeeding has several physical and psychological compensations for both mothers and infants. The main objective of this study was to determine the determinants related to breastfeeding based on the health belief model (HBM). This cross-sectional study was conducted among 423 women referred to health centers in Abadan city, the southwest of Iran, during 2016. Participants filled out a self-administered questionnaire. Data were analyzed by SPSS version 21 using bivariate correlations and logistic regression statistical tests at 95% significant level. The mean age of respondents was 30.01 years [95% CI: 29.48, 30.54], ranged from 18 to 40 years. Furthermore, the mean age of first pregnancy among respondents was 22.30 years [95% CI: 21.92, 22.69], ranged from 13 to 35 years. In addition, 75.3% (292/388) of respondents was reported had breastfeeding. Among the HBM variables: perceived severity with odds ratio estimate of 1.283 [95% CI: 1.155, 1.425], perceived barrier with odds ratio estimate of 0.877 [95% CI: 0.846, 0.910], and causes to action with odds ratio estimate of 1.051 [95% CI: 1.051, 1.116], were best predictor on breastfeeding. 75.3% of respondents was reported had breastfeeding, and perceived severity, perceived barrier, and causes to action more influential predictor on breastfeeding.

Keywords: Health Belief Model, Women, Infant.

INTRODUCTION

Infancy is considered as one of the most sensitive periods in growth and development of any individual and feeding at this stage is highly important. Breastfeeding in the first 6 month of life has a critical role in the development of the child and paying attention to it is one of the priorities of health policymakers in most societies throughout the world (1). Breast milk is the most

natural and safest food for infants and it provides the infant with a unique combination of proteins, carbohydrates, fats, minerals, vitamins and enzymes that have many nutritional, immunological, mental and economic benefits (2). Studies have shown that the risk of death due to diarrhea and acute respiratory infections are respectively 14.2 and 3.6 times higher in children

who are not being breastfed and the risk of death due to infectious diseases is 6 times higher in them in the first two months of their life (3). Statistics indicate that in most developing countries the three main causes of death in children under the age of 5 years are malnutrition, respiratory infections and diarrhea and breastfeeding has a significant role in reducing the deaths caused by the aforementioned problems (4). Breast milk reduces the severity of diseases such as diarrhea, infections of the lower respiratory tract, otitis, bacterial meningitis and urinary tract infection. Breast milk has an important role in the reduction of non-infectious diseases of infants such as eczema and asthma. Also, the level of Carnitine - a material necessary for the use of fatty acids as the source of energy - is higher in infants being breastfed, compared with formula-fed infants (10). These advantages have resulted in families being recommended to use exclusive breastfeeding for their infants in the first 6 month after birth and avoid giving the child any liquid or solid food (5). Breastfeeding may have important and long term effects on body physiology, metabolism and clinical status of human (6); breast milk may impact vascular endothelium that seems to result blood pressure during childhood and even adulthood (7). Regarding the psychological importance of breast milk, some psychologists believe that the solidarity between mother and child created by breast milk is the first and the most important solidarity in human life. Also, due to its availability, appropriate temperature and being free from bacterial contamination and consequently reducing the possibility of digestive problems, breast milk has been recommended as the best milk for newborns (8). Knowing the reasons and causes of lack of breastfeeding by mothers can be useful in providing applicable solutions for preventing it. In line with this, health belief model is a model analyzing health behavior that has been used in different studies and in different fields and emphasizes the way individual beliefs and perceptions regarding fear of health problems and assessment of advantages and

barriers of behavior result in adopting a behavior. According to health belief model a feeling of danger (perceived vulnerability) needs to be felt by the individual before adoption of a behavior and then the individual needs to perceive the depth of this danger and its seriousness which is called perceived severity and then individual adopts the behavior if he/she has a positive assessment of the advantages of the behavior and the lack of serious obstacles to doing the behavior. Self-efficacy is a confidence that the individual feels about doing a specific activity and if there is a high level of self-efficacy, the individual will easily do the healthy behavior (9-15). Therefore, considering the importance of the subject, the present study explored the factors that impact breastfeeding behavior of women with infants up to six months in the city Abadan using health belief model.

METHODS

This cross-sectional study was conducted among 423 women referred to health centers in Abadan city, the southwest of Iran, during 2016. The sample size was calculated at 95% significant level according to the results of a pilot study and a sample of 423 was estimated. The volunteers were given the self-questionnaire, also for volunteers who reported primary education data was collected from interview.

This study has been approved by the Institutional Review Board at the Abadan School of Medical Sciences, Abadan, Iran (IR.ABADANUMS.REC.1394.58). Of the population of 423, 388 (91.7%) signed the consent form and voluntarily agreed to participate in the study. Prior to conducting the main project, a pilot study was carried out. Initially the relevant questionnaires were administered to 30 women who were similar to study population in order to estimate the duration of the study conduction and to evaluate the reliability of the questionnaire. Estimated reliability using alpha Cronbach coefficient for each HBM constructs questionnaire were as follows: perceived susceptibility ($\alpha=0.81$); perceived severity ($\alpha=0.87$); perceived benefit

($\alpha=0.91$); perceived barrier ($\alpha=0.84$), self-efficacy ($\alpha=0.85$), and cues to action ($\alpha=0.90$).

Questionnaire included three sections that comprised of 42 questions, including: 7 questions for demographic factors, one questions about breastfeeding and 34 items for HBM variable.

A: Demographics

The background variables assessed in this study included: age (years), age of first pregnancy (years), number of children (number), job (housewife, working), education level (primary school, secondary school, high school, academic), multifetal (yes, no), economic status (weak, middle, good)

B: Breastfeeding Questionnaire

To assess whether or not the participants had experimented with breastfeeding, we used one questions “Do you breastfeeding only for your children” which the response category was yes or no.

C: HBM variable:

HBM scale was designed based on standard questionnaires and included 34 items under five constructs including (a) perceived susceptibility; (b) perceived severity; (c) perceived benefit; (d) perceived barrier; (e) self-efficacy, and (f) cues to action. Three items were designed to measure perceived susceptibility about side effect of don't breastfeeding (e.g. “If I don't breastfeeding, may be cause disease in my child.”). Two items were designed to measure perceived severity about side effect of don't breastfeeding (e.g., “If I don't breastfeeding, may be cause death of the child.”). Ten items were designed to perceived benefit for breastfeeding (e.g., “breastfeeding, is good to my infant health”). Nine items were designed to

evaluate perceived barrier to breastfeeding (e.g., “I do not have enough time to breastfeeding my infant.”). Three items were designed to perceived self-efficacy toward breastfeeding (e.g., “I think I have the ability to breastfeeding.”). Seven items were designed to cues to action to breastfeeding (e.g., “My friends encourage me to breastfeeding”). In order to facilitate participants' responses to the items, all items were standardized to a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). To enroll the participants and collect data the following stages were done. First, different areas of the city were classified based on the division of the geographical region; next for each social class two health centers were randomly selected. Then, subjects referred to the health centers for taking health care, were enrolled into this study voluntarily. Only the women who have from one to six month infant, and without a specific disease were eligible to participate in this study. Data were analyzed by SPSS version 21 using appropriate statistical tests including bivariate correlations and logistic regression at 95% significant level.

RESULTS

The mean age of respondents was 30.01 years [95% CI: 29.48, 30.54], ranged from 18 to 40 years. Furthermore, the mean age of first pregnancy among respondents was 22.30 years [95% CI: 21.92, 22.69], ranged from 13 to 35 years. More details of demographic characteristics of the participants are shown in Table 1. In addition, 75.3% (292/388) of respondents was reported had breastfeeding.

Table 1: Distribution of the demographic characteristics among the participants

Variables		Number	Percent
Age	18-25	83	21.4
	25-30	139	35.8
	31-35	87	22.4
	36-40	79	20.4
Number of Children	One	104	26.8
	Two	174	44.8
	Three	86	22.2
	More than Three	24	6.2
Job	Housewife	355	91.5
	Working	33	8.5

Education level	Primary school	62	16
	Secondary school	86	22.2
	High school	180	46.4
	Academic	60	15.5
Multifetal	Yes	12	3.1
	No	376	96.9

Table 2 shows bivariate associations among the predictor variables, which were all statistically significant at either 0.01 level. For example, causes to action toward breastfeeding was associated with the susceptibility toward side effect don't breastfeeding ($r=0.317$), severity toward side effect don't breastfeeding ($r=0.168$), benefit of breastfeeding ($r=0.355$), and self-efficacy toward breastfeeding ($r=0.326$), while inversely correlated with barrier toward breastfeeding ($r=-0.504$). Self-efficacy toward breastfeeding was associated with the susceptibility toward side effect don't breastfeeding ($r=0.516$), severity toward side effect don't breastfeeding ($r=0.347$), and benefit of breastfeeding ($r=0.576$), while inversely correlated with barrier toward breastfeeding ($r=-0.514$). Barrier inversely correlated with susceptibility toward side effect don't breastfeeding ($r=-0.474$), severity toward side effect don't breastfeeding ($r=-0.312$), and benefit of breastfeeding ($r=-0.531$). Benefit associated with the susceptibility toward side effect don't breastfeeding ($r=0.621$), and severity toward side effect don't breastfeeding ($r=0.396$). Finally, severity was associated with the susceptibility toward side effect don't breastfeeding ($r=0.536$).

Table 2: Predictor variables of breastfeeding based on bivariate correlation analysis

	Mean (SD)	Scores Range	X ¹	X ²	X ³	X ⁴	X ⁵
X ¹ . Susceptibility	12.72 (2.46)	3-15	1				
X ² . Severity	6.48 (2.60)	2-10	0.536*	1			
X ³ . Benefit	44.73 (6.19)	10-50	0.621*	0.396*	1		
X ⁴ . Barrier	19.20 (6.86)	9-45	-0.474*	-0.312*	-0.531*	1	
X ⁵ . Self-efficacy	13.39 (2.10)	3-15	0.516*	0.347*	0.576*	-0.514*	1
X ⁶ . Causes to action	30.26 (4.89)	7-35	0.317*	0.168*	0.355*	-0.504*	0.326*

Logistic regression analysis and backward stepwise method was calculated for predictability of HBM variables on breastfeeding. As mentioned in statistical analyses, a step-wise model building procedure was conducted and finally on 4th step the procedure stopped and the best model was selected, among the HBM variables: perceived severity with odds ratio estimate of 1.283 [95% CI: 1.155, 1.425], perceived barrier with odds ratio estimate of 0.877 [95% CI: 0.846, 0.910], and causes to action with odds ratio estimate of 1.051 [95% CI: 1.051, 1.116], more influential predictor on breastfeeding (Table 3).

Table 3: Logistic regression analysis for HBM variables related to breastfeeding

Variables	B	S.E.	Odds Ratio	95% Confidence Intervals		P-value
				Lower	Upper	
<i>Final Model; Step 4</i>						
Perceived Severity	0.249	0.054	1.283	1.155	1.425	< 0.001
Perceived Barrier	-0.131	0.019	0.877	0.846	0.910	< 0.001
Cause of Action	0.080	0.015	1.083	1.051	1.116	< 0.001

As mentioned in statistical analyses, a step-wise model building procedure was conducted and among the background variables: age of first pregnancy (OR=1.025), number of children (OR=2.779), multifetal (OR=0.167) were major factors to predict breastfeeding among the participants (Table 4).

Table 4: Logistic regression analysis for socio-demographic characteristics related to breastfeeding

Variables	B	S.E.	Odds Ratio	94% Confidence Intervals		P-value
				Lower	Upper	
<i>Final Model; Step 5</i>						
Age of First Pregnancy	0.071	0.023	1.073	1.025	1.123	0.002
Number of Children	0.728	0.150	2.071	1.543	2.779	< 0.001
Multifetal	-1.792	0.542	0.167	0.058	0.482	< 0.001

DISCUSSION

Our findings indicated, 75.3% of respondents were reported had breastfeeding. In this regards, Parsa et al in their study among 240 postpartum women who were selected randomly from eight public health care centers in Hamadan, the west of Iran, reported 23% of participants never breastfed their infants (17). The findings show that about a quarter of Iranian mothers do not follow breastfeed their babies; these results can be warning to health policy makers in Iran; and should be the focus of special attention.

Logistic regression analysis indicated among HBM variables perceived severity, perceived barrier, and causes to action more influential predictor on breastfeeding. Contrary to findings in Parsa et al study, which states that breastfeeding mothers were less likely to have perceived severity of illness for their child and more likely to have confidence to perform medical care compared to breastfeeding mothers (16).

Another finding of this study indicated number of children (OR=2.779), and multifetal (OR=0.167) were major factors to predict breastfeeding among the participants. In this regards, previous study have shown multipara women were more likely to breastfeed their babies (17). In addition, we found that older age at first pregnancy was a one of predictor for breastfeeding; However, Parsa et al reported no significant difference between age and breastfeeding (16); this result is not similar to the results reported by other studies. Furthermore, Edwards et al (18) and Kelishadi & Farajian (19) in their studies reported younger maternal have also been associated with a shorter duration of breastfeeding.

The results of the present study indicated that health belief model, in the constructs of perceived

threat in mother regarding the negative consequences of lack of exclusive breastfeeding, description of advantages and usefulness of exclusive breastfeeding together with emphasis on internal external factors that facilitate the breastfeeding behavior (guideline for action), explained mothers' behavior for feeding their infants well. Although this model cannot completely explain all the causes and factors impacting this behavior such as the shortcomings in policies and programs for breastfeeding, attracting public's attention to policies and programs for breastfeeding, it was able to explain mothers' feeding of their children, especially based on fear appeal indices, to an acceptable extent. Thus, in addition to the use of fear appeal models and theories in some behaviors and societies including behaviors related to family and traditional societies, the use of a set of constructs and theories for achieving a more acceptable explanation using the tested frameworks is emphasized for creating health promotion programs such as intervention mapping.

The findings reported in this study have certain limitations. First, the information is based on self-reporting, which always faces the risk of recall bias. Second, the present study investigated breastfeeding which was the main limitations of the present study and asks for more attention. Finally, in our study a relation between several factors such as: baby gender, length of breastfeeding, and etc with breastfeeding was not reviewed.

CONCLUSION

75.3% of respondents was reported had breastfeeding, and perceived severity, perceived

barrier, and causes to action more influential predictor on breastfeeding.

It seems that despite the contradiction in the explaining ability of fear appeal theories, these theories still have an acceptable explaining abilities for some behaviors in some societies.

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