

Predictors of exclusive breastfeeding in women: Using planned behavior theory

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ABSTRACT

Introduction: One of the most effective strategies to reduce mortality and morbidity in newborns is exclusive breastfeeding for six months. The current study aimed to determine the predictors of intention to breastfeed exclusively in mothers referred to comprehensive health services centers of Shahid Beheshti University of Medical Sciences using the theory of planned behavior. **Materials and Methods:** This descriptive-analytic study was carried out on 420 women who referred to comprehensive health services centers affiliated to Shahid Beheshti University of Medical Sciences through multistage sampling. The data gathering tool was a standard questionnaire based on the constructs of the theory of planned behavior. The questionnaires were completed, and the data were entered into SPSS 16, and then they were analyzed by Pearson correlation and multiple regression tests. **Results:** Results showed that 79.1% of the mothers intended to breastfeed exclusively until the end of six months. All three constructs of attitude ($P < 0.001$ and $r = 0.36$), subjective norms ($P < 0.001$ and $r = 0.74$), and perceived behavioral control ($P < 0.001$ and $r = 0.58$) have a significant correlation with intention. Among the variables introduced into the regression model, subjective norms and perceived behavioral control could predict 65% of the variances in intention to breastfeed exclusively ($R^2 = 0.65$ - $R = 0.80$). The strongest predictor was subjective norms. **Conclusion:** Regarding the predictability of the planned behavior theory, and since subjective norms and perceived behavioral control are the proper predictors for the intention to breastfeed exclusively; it is essential to consider the theory of planned behavior, especially these factors in the design of breastfeeding interventions.

Keywords: Exclusive breastfeeding, the theory of planned behavior, mothers

Introduction

Breast milk is the most natural and best food that can be readily available to the baby [1] and is a good nutrition for the development of children and has many benefits for the mother and the baby. Colostrum in breast milk contains large levels of immunoglobulin and nutrients that protect the baby from diseases including infectious diseases such as diarrhea, pneumonia, and allergic disorders such as asthma and eczema [2]. Breast milk in the first six months provides all the nutritional needs of the child and plays a very important role in protecting

the health of children in the world [3]. One of the most effective strategies to reduce mortality and morbidity in newborns is exclusive breastfeeding for six months. According to the results of breastfeeding studies, it can reduce 13 percent of children's mortalities in developing countries [4]. World Health Organization (WHO) recommends breastfeeding at the first hour of birth, exclusive breastfeeding for six months, and continuance of breastfeeding until 24 months of age [5]. In the studies, exclusive breastfeeding pattern is different in the first six months in different parts of the world. In China, 80% of children are breastfed exclusively in the first six months [6]. In the United States, in 2000, 35% of mothers breastfed their babies exclusively until six months of age, but this figure reached 50% in 2010 [7]. According to the latest report published from the study of multiple health and population indicators in 2010, exclusive breastfeeding is 53.13% in Iran (47.79% in the city and 62.76% in the village). The highest and lowest percentages of exclusive breastfeeding were reported in the provinces of Gilan (85.65) and Yazd (33.11), respectively. In the province of Tehran, 49.93% of infants are exclusively

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breastfed up to 6 months^[8]. In recent years, many efforts have been made to promote exclusive breastfeeding. Although in most cases, breastfeeding begins at birth, exclusive breastfeeding is sometimes overlooked in some cases. Therefore, it is essential to identify the factors affecting breastfeeding in mothers^[2]. Breastfeeding behavior is influenced by many physiological and psychological factors of mothers. It should be noted that changing physiological factors is difficult and in some cases impossible, therefore, interventions should be based on psychological and motivational factors to promote this behavior^[9]. Thus, measuring attitudes and beliefs, determining social norms and identifying barriers to breastfeeding can help understand breastfeeding behavior. Several theories have been raised about the role of population beliefs in health behaviors in health education and health promotion^[10]. The theory of planned behavior is one of the patterns of behavioral change^[11]. This theory is used to predict and understand behavior. This theory contains a range of behaviors from changes in behavior, intention to behave and behavior representation, and its effect has been experimentally confirmed in many studies^[12]. This theory predicts the occurrence of a particular behavior, provided that the person intends to do so. According to this theory, the intention to do a behavior is predicted by three factors: 1) an attitude that is a person's positive or negative assessment of a behavior^[2] subjective norms refer to the social pressure perceived by the individual in order to do or not to do the target behavior. People often act based on their perceptions of what others (friends, family, colleagues, etc.) think they need to do and their intention to potentially accept the behavior is affected by people who have close relationships with them. 3) Behavioral perceived control which is a degree of sense of individual control on doing or not doing a behavior^[13].

According to this theory, the mother intends to have natural breastfeeding when: 1) she has a positive view on normal breastfeeding (attitude); 2) feels that important people in her life want her to have breastfeeding naturally (social norms); 3) feels that there are factors which facilitate or inhibit her breastfeeding, but despite these factors, she can have a successful breastfeeding (perceived behavioral control)^[14].

Therefore, considering the importance of exclusive breastfeeding and the role of the constructs of the theory of planned behavior in changing the behavior of mothers as well as low rate of exclusive breastfeeding in the country as well as in Tehran^[8], this study aimed to determine the predictors of exclusive breastfeeding in mothers referring to comprehensive health services centers affiliated to Shahid Beheshti University of Medical Sciences using the theory of planned behavior. Based on the results of this study, we can identify the factors affecting exclusive breastfeeding and provide necessary interventions to promote this indicator.

Method

In this cross-sectional descriptive-analytic study in 2017, 420 women referred to comprehensive health services centers

affiliated to Shahid Beheshti University of Medical Sciences were selected by multistage sampling. Therefore, two comprehensive health services centers from eastern and northern health centers and one comprehensive health services center from Sheminarat network were selected by the simple random method. Then, the samples were determined in a systematic random method through household file numbers inside the comprehensive health services centers.

The inclusion criteria were having health records, having a child less than two months and ability to breastfeed. According to previous studies^[8], the sample size was calculated to be 384 individuals based on the 0.5 estimate error and confidence coefficient of 95% ($Z = 1.96$), and regarding 10% dropout, 420 individuals were obtained.

The data collection tool was a multi-sectional questionnaire. The first part contains the demographic characteristics of mothers (age, education level, occupational status, delivery status, breastfeeding status, etc.). The second part includes questions related to the constructs of the theory of planned behavior (attitude, example: I believe that breast milk is a complete food for my infant until 6 months, subjective norms, example: my husband asked me to use infant formula in addition to the breast milk before 6 months, and perceived behavioral control, example: it is difficult for me to breastfeed my infant), and the third part includes the intention questions. Example: I am going to breastfeed my infant exclusively until six months after birth. The five-point Likert scale has been used to score the questionnaire, (totally agree, agree, no idea, disagree, and totally disagree).

Obtaining permission from relevant authorities, informed and voluntary consent of the participants, keeping the information of the individuals and the health system confidential, using coding instead of writing the name and surname in the questionnaire were among the ethical considerations that were observed in this study.

The questionnaires were completed in a month and data were collected by SPSS 16. Then they were analyzed using Pearson correlation and multiple regression tests.

Results

The sample consisted of 420 women referred to urban comprehensive health services centers affiliated to Shahid Beheshti University of Medical Sciences. The mean and standard deviation were 26.29 ± 4.58 . Regarding education, 200 (47.6%) had a university education, 104 (24.8%) were employed (Table 1).

Pearson correlation results showed that there is a positive and significant correlation among all the constructs of the theory of planned behavior and the intention to breastfeed exclusively. (Table 2).

The results of stepwise multiple regression showed that in model 1, subjective norms are considered as the strongest predictor with ($P < 0.001$, $B = 0.77$). 76 percent of the variance is made in the intention of mothers to breastfeed infants exclusively per unit of change in the construct of

subjective norms. This model accounted for 59% of the variance. In Model 2, in addition to the Subjective Norms, Perceived Behavioral Control is a predictive construct for behavioral intention, Subjective Norms ($P < 0.001$, $B = 0.77$) and Perceived Behavioral Control ($P < 0.001$, $B = 0.29$) account for a total of 65% of variance in predicting behavioral intention.

In regression analyses done on the items of Subjective Norms, results showed that the mother and sister ($P < 0.001$, $B = 0.35$), friends ($P < 0.001$, $B = 0.30$), spouse ($P < 0.001$, $B = 0.28$), mother-in-law and sister-in-law ($P < 0.001$, $B = 0.25$) and health staff and doctors ($P < 0.001$, $B = 0.19$) are respectively predictors of subjective norms, and the effect of mother and sister on the intention to breastfeed exclusively is more than that of other people (Table 3).

Discussion

There is a positive and significant correlation among all the constructs of the theory of planned behavior in exclusive breastfeeding. All three constructs of attitude ($P < 0.000$, $r = 0.36$), subjective norms ($P < 0.000$ and $r = 0.74$), and perceived behavioral control ($r = 0.58$, $p < 0.000$) had significant correlation with intention. Among the variables introduced into the regression model, subjective norms and perceived behavioral control could predict 65% of the variances in intention to breastfeed exclusively. The subjective norms were stronger predictors for the intention than other constructs. Culture, race, and ethnicity are among the main factors that can affect subjective norms suggesting that people around a person, such as father, mother, siblings, religious leaders, political leaders, etc., all influence her ideas and behaviors^[15].

In the study of Pakpour et al. (2014), the constructs of planned behavior theory significantly predicted exclusive breastfeeding with 59% variance.^[2] Also, the results of Rahimi et al. (2014) showed that all three constructs of attitude, subjective norms and perceived behavioral control showed a significant correlation with intention. Among the variables introduced into the regression model, attitude and perceived behavioral control could predict 43% of variances in the intention to breastfeed exclusively in pregnant women^[16].

In a study conducted by Tangko et al. in 2016, according to the planned behavioral theory, 51% of the variance was explained by intention, perceived behavioral control, and attitude, and these constructs were significant predictors. Theory of planned behavior has the potential to predict well the intention and behavior of exclusive breastfeeding^[17].

The study by Van et al. in 2015 on Chinese women showed that there was a significant positive correlation among exclusive breastfeeding at four months of age and awareness, attitude, subjective norms and perceived behavioral control. Logistic regression analysis showed that all five factors could significantly predict exclusive breastfeeding within four months^[6].

Based on the results of the Bahra and Anil (2015), high awareness (with the odds ratio of 116.67%) and a positive attitude (with the odds ratio of 3.18%), supportive norms (with the odds ratio of 2.61%) and high perceived behavioral control (with the odds ratio of 5.37%) had a strong impact on the intention to breastfeed exclusively among pregnant women^[18]. The results of the study by Milan et al. are consistent with the results of the current study, and their results showed that the constructs of the theory of planned behavior predicted strongly breastfeeding at birth, hospital discharge time, ten days after discharge, and six weeks after discharge^[19].

The study by Bay et al.^[20] showed that the use of the constructs of the theory of planned behavior such as attitude, subjective norm, and behavioral control showed a significant relationship with the intention of breastfeeding in mothers. In another similar study^[12], the structure of the planned theory played an effective role in predicting mothers' breastfeeding behaviors for six months of age and predicted 50% of the variances in the intention to breastfeed newborns. The results were consistent with that of the current study.

In the study by Rahimi et al., subjective norms, although have a positive and direct relationship with behavioral intention, could not predict it. In the study by Motoli et al., all three constructs of the theory of planned behavior could predict 68% of the variances in optimal breastfeeding intention in mothers who referred for postpartum care.^[16] An Ethiopian study also showed that attitude, subjective norms and perceived behavioral control could predict 28.7% of the intention to breastfeed exclusively in pregnancy^[22].

In Rahimi et al., the attitude was the most important factor in predicting intention. There are similar studies that support the predictability of attitude. For example, the study of Bay et al. showed that the attitude of mothers predicted 50.2% of the behavioral intention variances for exclusive breastfeeding until the end of the sixth month^[21]. In the study of Motoli et al. 48% of the variance in attention was predicted through attitude^[23].

Conclusion

The results of this study showed that the theory of planned behavior is a suitable theory to explain the effect of psychosocial factors on the design and implementation of educational programs aimed at exclusive breastfeeding. Considering that subjective norms and perceived behavioral control are the proper predictors for intention to breastfeed exclusively, it is essential to consider these factors in breastfeeding interventions. These factors should be considered in the planning of pregnancy training to promote exclusive breastfeeding.

Limitations

One of the limitations of this study is the collection of data by self-report questionnaire as well as the use of the theory of planned behavior because several factors play a role in the

formation of exclusive breastfeeding behavior and we could not study them due to using of such theory.

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Table 1. Demographic information of the women studied

Variables	category	(Percentage) number
Age	15-25	(45.2) 190
	25-40	(54.8) 230
Education	Less than diploma	(52.4) 220
	academic	(47.6) 200
job	Housewife	(75.2) 316
	Employed	(24.8) 104
Husband's education	Less than diploma	(49.3) 207
	academic	(50.7) 213
	labor	(14.8) 62
Husband's job	Employee	(40.7) 171
	Free job	(44.5) 187
income	Middle	(60.7) 225
	Good	(39.3) 79.7

Table 2. Correlation between Attitude, Subjective Norms, Perceived Behavioral Control and Intent

Constructs		1	2	3	4
1. Attitude	Pearson	1			
	Correlation				
	Sig. (2-tailed)				
2. Subjective Norms	Pearson	.330**	1		
	Correlation				
	Sig. (2-tailed)	.000			
3. Perceived Behavioral Control	Pearson	.367**	.465**	1	
	Correlation				
	Sig. (2-tailed)	.000	.000		
4. Intent	Pearson	.363**	.764**	.583**	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	

** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Predictors of exclusive breastfeeding intention based on multiple linear regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R Square
	B	Std. Error	Beta				
1	(Constant)	31.223	2.229	14.007	.000	.765 ^a	.585
	Subjective Norms	.701	.029	.765	24.191	.000	
2	(Constant)	24.388	2.194	11.114	.000	.806 ^b	.650
	Subjective Norms	.577	.030	.630	19.153	.000	
	Perceived Behavioral Control	.306	.035	.288	8.746	.000	

a. Predictors: (Constant), Subjective Norms