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Original Article

The Effect of Educational Intervention Based on the Theory of Planned Behavior in Pregnant Women and Individuals Affecting Their Exclusive Breastfeeding: A Controlled Trial

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Abstract

Background: Breastfeeding affects long-term child health and improves the quality of their lives. This study sought to compare educational interventions based on the theory of planned behavior (TPB) in pregnant women and individuals influential to their exclusive breastfeeding (EBF) in the first six months of an infant's life.

Methods: This quasi-experimental study was performed from 2020 to 2021 on pregnant women, who were at their > 30 weeks of pregnancy, and relatives influential in their life in Jahrom, southern Iran. Sampling was conducted by the stratified random method, and the sample size was determined as 90 (30 cases in each group). The study consisted of two intervention groups and a control group. Data collection tools included the demographic questionnaire and the standard TPB questionnaire for EBF. In the first stage, the questionnaires were completed by all three groups. The second stage involved an educational intervention. The training lasted five weeks. In the third stage, the questionnaire was completed again six months later. The collected data were analyzed by SPSS 21 using one-way ANOVA, chi-square, Mann-Whitney, Wilcoxon, and Kruskal-Wallis tests.

Results: Based on the results, a significant difference was observed in intervention group 1 in terms of the attitude construct ($P = 0.009$) before [Median (IQR) = 34.5 (6)] and after [Median (IQR) = 36 (5.25)] the educational intervention. Similarly, a significant difference was found in intervention group 2 regarding the subjective norm construct ($P < 0.001$) before [Median (IQR) = 25 (4.25)] and after [Median (IQR) = 30 (4)] the educational intervention.

Conclusion: Overall, in addition to pregnant women, their subjective norms should be considered in health education and promotion programs to improve EBF.

Keywords: Pregnant women, Breast feeding, Health education, Attitude, Theory of planned behavior

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Introduction

Breastfeeding promotes child health and improves the quality of their lives (1). The benefits of breastfeeding during infancy extend to adulthood. These effects on their quality of life (QoL) are long-lasting (2). According to the World Health Organization (WHO), exclusive breastfeeding (EBF) in the first six months of life is the preferred method of breastfeeding (3). EBF promotes better growth and fewer deaths from infectious and allergic diseases. Moreover, fewer negative emotions are observed in the mood of these infants (4).

The stated goal by the WHO was to achieve EBF in the first six months up to at least 50% worldwide by 2025 (5). However, EBF in these months of life is not at the desired level in the world (6). Of the 56 million babies worldwide, approximately 22 million are exclusively breastfed (7), and according to reports (8,9), only 37% of children under five months of age are exclusively breastfed (5) in developing countries, including Tanzania (20.7%) and Syria (12.9%). This rate is reported to be 23.1% in Iran (10); however, a systematic review calculated it at 53% (11).

The results of a study in Shiraz (Fars province, Iran) demonstrated that many mothers refuse EBF due to a lack of knowledge and skills (12). Interventions based on sociopsychological theories are useful tools for designing interventions to change behaviors in desirable directions (13).

Based on the results of another study, mothers' attitudes towards breastfeeding, social media support, and appropriate breastfeeding conditions in the community are effective factors in successful breastfeeding in the first months after delivery (14). The theory of planned behavior (TPB) has been widely used for predicting many health-related behaviors, including breastfeeding (15,16). In TPB, the intention is the main determinant of behavior. According to this theory, three constructs determine an individual's intention to perform a behavior, including attitudes toward behavior, subjective norms, and perceived behavioral control. These constructs are characterized as the overall positive and negative assessment of behavior, perception of significant others' thoughts and motivation to follow them, and perception of individuals about the degree of control over behavior, respectively (17,18).

One of the most important factors in breastfeeding is the subjective norms of women, including their views of their husbands, mothers, friends, and other people affecting them (19). Although some studies have been performed in different countries, including Iran, to investigate the effect of TPB on breastfeeding behaviors (20,21), they have not directly trained the subjective norms of women about EBF.

The attitude construct and perceived behavioral control construct are influenced by the personal evaluation of behavior and an individual's perception of control over behavior, respectively, while the subjective norm construct is affected by the opinions of people influencing the individual. Therefore, this study sought to determine and compare the effect of separate TPB-based educational interventions in pregnant women and the subjective norms of pregnant women on EBF in the first six months of life and different constructs of the TPB. Considering the importance of EBF and its low ratio in the country, as well as the lack of sufficient statistics and research in this field in Jahrom, the mentioned national statistics can only be generalized to this city. Therefore, the present study compared the effect of educational interventions based on the TPB on EBF up to six months in pregnant women and individuals contributing to their life in Jahrom in 2020.

Materials and Methods

The current quasi-experimental study was conducted between September 2020 and July 2021 on women who were at their > 30 weeks of pregnancy and had health records in health centers and their influential relatives (including their husbands, mothers, and mothers-in-law) in Jahrom, southern Iran. The sample size was 23 individuals. According to Arshad et al (21), the confidence level, power, and the maximum acceptable difference (effect size) were 95%, 80%, and 2 points, respectively. The standard deviation was 21.3 in each group. Given the probability of dropouts, the minimum sample was considered as 30 people in each group (90 in total). The participants were selected using a multistage cluster random sampling technique. Given the number of comprehensive urban health centers, Jahrom was divided into eight clusters, and the researchers randomly selected three health centers for the study. In each health center, 30 individuals were selected based on the health records of pregnant women and the data in the SIB system (An online integrated health system that records and keeps all information about households and the type of health services and programs required and implemented in health centers) by simple random sampling.

Iranian women, in their > 30 weeks of pregnancy, living in Jahrom were included in the study. On the other hand, the exclusion criteria included dissatisfaction with participation in the study, prohibition of breastfeeding and history of certain disease(s) or problem(s), and unavailability of related individuals (their husbands, mothers, and mothers-in-law).

The first group included pregnant women who underwent the intervention (Intervention group 1). The second group contained pregnant women whose families underwent the intervention (Intervention group 2). Finally, the third group encompassed pregnant women who were not intervened at all (control group). Related details are depicted in Figure 1.

After selecting the samples, the participants were assured of the confidentiality of the information and optional participation in the study was. Written informed consent forms were obtained for voluntarily participating in the study. Data collection tools included the demographic information questionnaire (age, spouse age, pregnancy week, duration of marriage, area of residence, self-assessment of the economic situation, level of education, and the spouse's education and job) and the standard TPB questionnaire for EBF, the validity and reliability of which were reviewed and approved in Iran. Face validation and content validity were used to validate the questionnaire. Cronbach's alpha and intra-class correlation coefficients were calculated to determine reliability. The results showed that all 25 questions of the TPB questionnaire had acceptable content validity (0.66-0.99). The measures of Cronbach's alpha and intra-class correlation coefficients were 0.79 and 0.81, respectively (22). The questionnaire has a total of 25 items (11, 7, 4, and 3 items for attitude, subjective norms, perceived behavioral control, and behavioral intention, respectively). The items are measured on a five-point Likert-type scale (strongly disagree and strongly agree); the value of each item is between one and five. The minimum and maximum possible scores are 25 and 125, respectively. The intra-class correlation coefficient was calculated to determine reliability. The questionnaire was randomly filled in by 30 pregnant women, who had health records in health centers in Jahrom by the test-retest method with an interval of two weeks at this stage of the study, sample participants did not participate in the next stages. The intra-class correlation coefficient was calculated as 0.79, 0.73, 0.80, 0.74, and 0.76 for the attitude, subjective norms, perceived behavioral control, behavioral intention, and total questionnaires.

The study was conducted in three stages. In the first

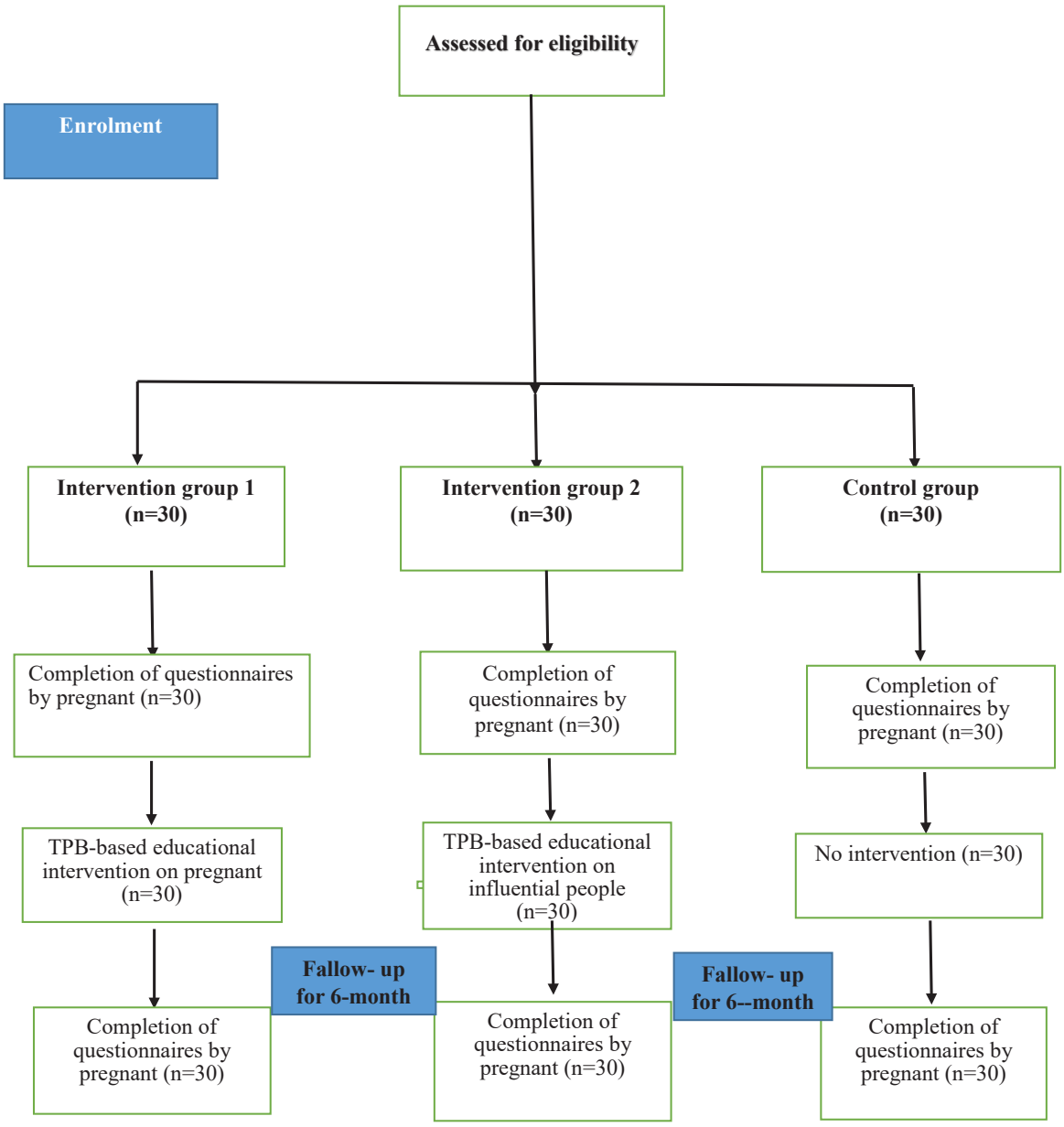

Figure 1. Steps of Implementing the Research Plan. *Note*. TPB: Theory of planned behavior.

stage, the questionnaires were filled in by all three groups of pregnant women (intervention 1, intervention 2, and the control group). The second stage involved the design and implementation of an educational intervention. After analyzing the obtained information from the first stage and carefully studying the valid scientific texts, the researchers resigned the educational intervention under the supervision of experts. In intervention groups 1 and 2, pregnant women and influential individuals in their lives were educated based on TPB constructs (attitude, subjective norms, and perceived behavioral control), respectively. The educational content and training method appropriate to each of the TPB constructs were prepared using valid scientific sources. Educational topics included the importance and benefits of breastfeeding, problems of feeding with formula, the adequacy of breast milk, misconceptions about breastfeeding, and the different methods and conditions of breastfeeding (Supplementary file 1, Tables S1 and S2).

The training methods contained face-to-face training, pamphlet distribution, phone calls, SMS messages, and transfer of educational content and videos through cyberspace which lasted five weeks; the first and fifth weeks of face-to-face training were accompanied with the distribution of pamphlets, and the training was performed via SMS messages, phone calls, and cyberspace from the second to the fifth week.

In the third stage, six months after the end of the educational intervention, the TPB questionnaire for EBF was completed again by the three groups (pregnant women), and the obtained data from the three groups were compared with each other and those obtained before the intervention.

In all stages of data collection, intervention, and

data analysis, the researcher was extremely careful and trustworthy. After the intervention, an EBF training course was held for the control group.

After collecting the questionnaires, the obtained data were entered into SPSS, version 21. The normality of the data was checked by the Kolmogorov-Smirnov test. Qualitative and quantitative data were expressed as frequencies and percentages, as well as means ± standard deviations.

In addition, qualitative variables in the groups were compared by the chi-square test, and quantitative variables were compared using Mann-Whitney, Wilcoxon, and Kruskal-Wallis tests. Finally, Bonferroni-corrected Mann-Whitney U test was applied as the post hoc test, and a *P* value of less than 0.05 was considered statistically significant.

Results

The mean ages of participants and their spouses were 29.59 ± 6.08 and 34.16 ± 6.00, respectively. The average duration of their marriage was 7.13 ± 4.74. Most participants had one child (38.9%) and 66.7% of them lived in urban areas. The majority of people had a medium economic situation (67%). The highest education level among the participants was related to a diploma (36.7%), while it was undergraduate (44.4%) among their spouses. Most participants were housewives (86.7).

The mean ages of the pregnant women in the intervention groups 1 and 2 and the control group were 31.17 ± 6.15, 29.97 ± 4.86, and 27.63 + 6.74, respectively ($P = 0.071$). The mean age of their spouses in the intervention and control groups was 36.00 ± 6.04, 34.23 ± 5.51, and 32.23. 6.022, respectively ($P = 0.055$). In addition, the variables of pregnancy week, duration of the marriage, area of residence, economic status, education level, and spouse's education level and job were not significantly different in the intervention and control groups ($P > 0.05$, Table 1).

Tables 2 and 3 present a comparison of the median scores of TPB constructs in the intervention groups 1 and 2 (pregnant women and people related to them) and the control group before and after the educational intervention. According to the findings, no significant

Table 1. Comparison of Frequency Distribution of Demographic Characteristics of Intervention and Control Groups

Variable	Grouping	Intervention Group of Pregnant No. (%)	Control Group No. (%)	Intervention Group of Influential People No. (%)	*P* Value
Age	19-24	4 (13.3)	13 (43.3)	5 (16.7)	0.647
	25-30	12 (40)	8 (26.7)	13 (43.3)	
	31-36	7 (23.3)	4 (13.3)	10 (33.3)	
	37-46	7 (23.3)	5 (16.7)	2 (6.7)	
Spouse age	24-30	7 (23.3)	16 (53.3)	9 (30)	0.230
	31-37	10 (33.3)	8 (26.7)	11 (36.7)	
	38-44	10 (33.3)	4 (13.3)	9 (30)	
	45-50	3 (10)	2 (6.7)	1 (3.3)	
Pregnancy week	<20	4 (13.3)	60 (20)	60 (20)	0.730
	>20	26 (86.7)	24 (80)	24 (80)	
Duration of marriage	1-5	9 (30)	15 (50)	13 (43.3)	0.620
	6-11	16 (53.3)	11 (36.7)	13 (43.3)	
	>12	5 (16.7)	4 (13.3)	4 (13.3)	
Area of residence	Urban	22 (73.3)	22 (73.3)	22 (73.3)	0.165
	Rural	8 (26.7)	8 (26.7)	8 (26.7)	
Self-assessment of the economic situation	Weak	2 (6.7)	5 (16.7)	4 (13.3)	0.731
	Medium	24 (80)	21 (70)	22 (73.3)	
	Good	4 (13.3)	4 (13.3)	4 (13.3)	
Education level	Undergraduate	8 (26.7)	8 (26.7)	7 (23.7)	0.420
	Diploma	10 (33.3)	8 (26.7)	10 (33.3)	
	Master	5 (16.7)	6 (20)	6 (20)	
	Bachelor and above	7 (23.7)	8 (26.7)	7 (23.7)	
Spouse's education level	Undergraduate	11 (36.7)	15 (50)	14 (46.7)	0.320
	Diploma	123 (40)	11 (36.7)	8 (26.7)	
	Master	4 (13.3)	1 (3.3)	1 (3.3)	
	Bachelor and above	3 (10)	3 (10)	7 (23.3)	
Job	Housewife	26 (86.7)	26 (86.7)	26 (86.7)	0.993
	Employed	4 (13.3)	4 (13.3)	4 (13.3)	

Table 2. Comparison of TPB in Intervention Group 1 (Pregnant Women) and Control Group Before and After the Intervention

Variable		Before Intervention Median (IQR)	After Intervention Median (IQR)	Difference Median (IQR)	*P* Value[a]
Attitude	Pregnant group	34.5 (6)	36 (5.25)	2 (5)	0.009
	Control group	35 (5)	34 (4.25)	0 (0)	0.960
	P value[b]	0.790	0.021	0.007	NA
Subjective norms	Pregnant group	26 (3.50)	27 (3.50)	3 (5)	0.031
	Control group	26 (4)	26 (3)	0 (0.25)	0.874
	P value[b]	0.800	0.200	0.055	NA
Perceived behavioral control	Pregnant group	11 (1.5)	12 (3)	1 (2.25)	0. 011
	Control group	12 (4)	12 (4)	0 (0)	0.266
	P value[b]	0.640	0.210	0.034	NA
Behavioral intention	Pregnant group	11 (3.5)	12 (3)	3 (4)	<0.001
	Control group	12 (2.25)	12 (4)	0 (0)	0.711
	P value[b]	0.110	0.300	<0.001	NA

Note. IQR: *interquartile range;* NA, not applicable; TPB: theory of planned behavior
[a] Wilcoxon test; [b] Mann-Whitney U-test.

Table 3. Comparison of TPB in Intervention Group 2 (Influential People) and the Control Group Before and after the Intervention

Variable		Before Intervention Median (IQR)	After Intervention Median (IQR)	Difference Median (IQR)	*P* Value[a]
Attitude	Influential people	34 (4.25)	34 (4.25)	0 (2)	0.813
	Control group	35 (5)	34 (4.25)	0 (0)	0.960
	P value[b]	0.990	0.850	0.60	NA
Subjective norms	Influential people	25 (4.25)	30 (4)	4 (5)	<0.001
	Control group	26 (4)	26 (3)	0 (0.25)	0.874
	P value[b]	0.400	<0.001	<0.001	NA
Perceived behavioral control	Influential people	11.5 (2.25)	12 (2.25)	0 (1)	0.541
	Control group	12 (4)	12 (4)	0 (0)	0.266
	P value[b]	0.300	0.294	0.94	NA
Behavioral intention	Influential people	11 (3)	12 (3.25)	1 (2)	<0.001
	Control group	12 (2.25)	12 (4)	0 (0)	0.711
	P value[b]	0.220	0.411	<0.001	NA

Note. IQR: *interquartile range;* NA, not applicable; TPB: theory of planned behavior
[a] Wilcoxon test; [b] Mann-Whitney U-test.

difference was observed between TPB constructs in the intervention and control groups before the educational intervention ($P<0.05$).

However, there was a significant difference in the intervention group 1 (pregnant) before [Median (IQR) = 34.5 (6)] and after [Median (IQR) = 36 (5.25)] the educational intervention ($P=0.009$) and with the control group [Median (IQR) = 34 (4.25) ($P=0.021$)] in terms of the attitude construct. Contrarily, such a significant difference was not observed in intervention group 2 (people influencing pregnant women).

Based on the results, a significant difference was found in the intervention group 1 (pregnant) before [Median (IQR) = 26 (3.50)] and after [Median (IQR) = 27 (3.50)] the educational intervention regarding the subjective norms ($P=0.031$). Moreover, a significant difference was detected in the intervention group 2 (people influencing the pregnant women) before [Median (IQR) = 25 (4.25)] and after [Median (IQR) = 30 (4)] the educational intervention ($P<0.001$) and with the control group [Median (IQR) = 26 (3), $P<0.001$] with regard to the subjective norm construct.

There was also a significant difference in intervention group 1 (pregnant women) before [Median (IQR) = 11 (1.5)] and after [Median (IQR) = 12 (3)] the educational intervention ($P=0.011$) in terms of the perceived behavioral control construct. Conversely, such a significant difference was not observed in intervention group 2 (people influencing the pregnant women).

The results revealed a significant difference in the behavioral intention construct in intervention group 1 (pregnant women) before [Median (IQR) = 11 (3.5)] and after [Median (IQR) = 12 (3)] the educational intervention ($P<0.001$) and intervention group 2 (people influencing the pregnant women) before [Median (IQR) = 11 (3)] and after [Median (IQR) = 12 (3.25)] the educational intervention ($P<0.001$).

Table 4 compares all three groups. As regards the attitude construct, a significant difference was detected

Table 4. Comparison of TPB in the Two Groups of Intervention (Pregnant Women and Groups of People Influencing Them) and the Control Group

Variable		Before Intervention Median (IQR)	After Intervention Median (IQR)	Difference Median (IQR)	*P* Value[a]
Attitude	Pregnant group	34.5 (6)	36 (5.25)	2 (5)	0.009
	Influential people	34 (4.25)	34 (4.25)	0 (2)	0.813
	Control group	35 (5)	34 (4.25)	0 (0)	0.960
	P value[b]	0.971	0.0352	0.009	NA
	Ppi***	NA	0.045	0.041	NA
	Ppc	NA	0.041	0.031	NA
	pic	NA	0.99	0.70	NA
Subjective norms	Pregnant group	26 (3.50)	27 (3.50)	3 (5)	0.031
	Influential people	25 (4.25)	30 (4)	4 (5)	<0.001
	Control group	26 (4)	26 (3)	0 (0.25)	0.874
	P value[b]	0.741	<0.001	<0.001	NA
	Ppi[c]	NA	0.004	0.018	NA
	Ppc	NA	0.200	0.247	NA
	pic	NA	0.0004	0.0004	NA
Perceived behavioral control	Pregnant group	11 (1.5)	12 (3)	1 (2.25)	0. 011
	Influential people	11.5 (2.25)	12 (2.25)	0 (1)	0.541
	Control group	12 (4)	12 (4)	0 (0)	0.266
	P value[b]	0.403	0.144	0.056	NA
Behavioral intention	Pregnant group	11 (3.5)	12 (3)	3 (4)	<0.001
	Influential people	11 (3)	12 (3.25)	1 (2)	<0.001
	Control group	12 (2.25)	12 (4)	0 (0)	0.711
	P value[b]	0.198	0.113	<0.001	NA
	Ppi[c]	NA	NA	0.048	NA
	Ppc	NA	NA	0.0004	NA
	pic	NA	NA	0.0004	NA

Note. TPB: Theory of planned behavior; P: Pregnant group, I: Influential group, C: Control group; NA: Not applicable.
[a] Wilcoxon test; [b] Kruskal-Wallis; [c] Post hoc: Bonferroni-corrected Mann-Whitney U-test.

between the two groups of pregnant women and people influencing them ($P=0.045$), as well as between the two groups of pregnant women and controls ($P=0.041$) after the educational intervention, while the difference between the two groups of influential people and the control was not significant.

Regarding the subjective norm construct, a significant difference was observed between the two groups of pregnant women and people influencing them ($P=0.004$) and between people influencing the pregnant women and control groups ($P=0.0004$) after the educational intervention; however, the difference between the two groups of pregnant women and control was not significant. In terms of the perceived behavioral control construct, no significant difference was found between the three groups after the educational intervention. Contrarily, a significant difference was reported in the mean score difference of all three groups regarding the behavioral intention construct after the educational intervention ($P<0.05$).

Discussion

According to the results of this study, the TPB-based educational intervention on EBF up to 6 months among pregnant women was effective in improving attitudes, subjective norms, and perceived behavioral control constructs. Further, this educational intervention had a strong effect on improving the subjective norm construct on the influential people around pregnant women. Finally, the educational intervention led to the improvement of the behavioral intention construct in both intervention groups.

In the present study, the attitude construct in intervention group 1, in which pregnant women directly participated in the training program, improved significantly compared to before the educational intervention and the control group. Nonetheless, this improvement was not observed in pregnant women in intervention group 2, in which influential people in pregnant women's lives participated in the training program. The improvement in the attitude construct was observed in most studies in which pregnant women participated in a TPB-based educational intervention on breastfeeding behavior (20,21,23-25). However, in the study by Ahmadi et al (26), the educational intervention was not effective in improving the attitude construct. It seems logical that implementing an educational intervention directly on people can be

more effective in changing their attitudes.

As regards the subjective norm construct, the educational intervention caused a strong significant increase in intervention group 2, in which influential people participated in the training program before and after the educational intervention and in comparison with the control group. On the other hand, in intervention group 1, in which pregnant women directly participated in the training program, the improvement of this construct was observed only before and after the educational intervention and with a weaker level of significance.

Similar to the present study, the findings of Latifi et al showed that the husband, mother, mother-in-law, and health personnel were the most important subjective norms for breastfeeding, while friends and family were the least important ones (27). According to Rostamkhan and colleagues' findings, subjective norms are important factors in choosing the type of breastfeeding in mothers (28). Likewise, Zhang confirmed the relationship between the subjective norm construct and improved EBS (29). Rasoli et al (20) and Arshad et al (21) also demonstrated the effect of the educational intervention on improving the subjective norm construct in EBF. In a similar study by Zhu et al on women in hospital care for childbirth (25), a decrease in the score of subjective norms was found in both intervention and control groups six weeks after the intervention; the cause may be less related to the supportive environment after discharge from the hospital. It seems that performing the educational intervention on the effective environment of pregnant women has been able to have a strong impact on pregnant women and improve the subjective norm construct in them. Although such an effect is observed in direct education to pregnant women, it is extremely weaker in comparison. This is a highly important finding that highlights the need for paying attention to subjective norms in educational programs to improve the TPB construct, especially subjective norms.

In intervention group 1, the perceived behavioral control construct improved significantly after the educational intervention, while no improvement was observed in intervention group 2 and the control group. However, there was no significant difference between intervention group 1 and the control group in this case. Arshad et al (21), Zhu et al (25), Rasoli et al (20), and Keramat et al (24) reported the effect of the educational intervention on women regarding improving the perceived behavioral control construct for breastfeeding. Direct educational intervention on pregnant women seems to be relatively effective compared to educating influential people.

In both intervention groups 1 and 2, the behavioral intention construct had a significant improvement after the educational intervention compared to before the intervention. According to the findings of Bartle and Harvey, the intention of breastfeeding in women was related to the attitude and subjective norms (30). Additionally, Tengku Ismail concluded that the improvement of women's intention to perform EBF is influenced by their perceived behavioral control and attitude (31). In another study, Guo introduces attitudes, subjective norms, and perceived behavioral control as the predictors of the intention of breastfeeding (32). Interestingly, the improvement in the behavioral intention construct was observed in both intervention group 1 (where the improvement occurred in the attitude, subjective norms, and perceived behavioral control constructs) and intervention group 2 (where the improvement occurred only in the subjective norms construct). This can indicate the importance of the subjective norm construct in creating behavioral intent and modifying behavior, as well as the need to pay attention to the subjective norms of individuals in planning educational interventions.

The strengths of this study were the use of a combination of different methods of face-to-face, distance, and cyberspace education and the lack of a need to attend classroom training sessions due to the condition of COVID-19. On the other hand, one of the limitations of the study was fear and anxiety of pregnancy and those around them to participate in the study due to the critical situation caused by COVID-19; nonetheless, we attempted to get their cooperation by ensuring compliance with health protocols in data collection and implementation of interventional education. Another limitation was the old age of some mothers and mothers-in-law who had problems with education, especially virtual education, and thus efforts were made to solve this problem by following up with educators.

Accordingly, it is suggested that further studies focus on different factors affecting behavior and different constructs of health education and promotion models, and an effective intervention be planned and implemented on each of these constructs. In the present study, it was found that intervention on subjective norms could improve individuals' intentions to adopt the right behavior.

Conclusion

The educational intervention on pregnant women, based on TPB for EBF, was effective on the attitude construct and, to a lesser extent, subjective norms and perceived behavioral control constructs and thus improved behavioral intention. This intervention on the people related to pregnant women was effective on the subjective norm construct and improved behavioral intention. Therefore, subjective norms should be considered in educational and health promotion programs for improving infant breastfeeding.

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Authors' Contribution

RV (First author): Statistical Analysis/finds writer/main researcher (25%); KJV (Second author): Introduction and discussion writer/main researcher (15%); RF (Third author): Introduction writer/

main researcher (10%); NF (Forth author): Discussion writer/main researcher (10%); SN (Fifth author): Methodologist/main writer/main researcher (40%).

Conflict of Interests
Authors declare that they have no conflict of interests.

Ethical Permissions
This study was approved by the Ethics Committee of Jahrom University of Medical Sciences (Code IR.JUMS.REC.1399.081).

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Supplementary files
Supplementary file 1 contains Tables S1 and S2.

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