

The effect of educational method based on theory of planned behavior on childbearing decision in marrying couples

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Abstract

Background: The aim of this study was to investigate the effect of educational method, based on the theory of planned behavior on childbearing decision in married couples.

Materials and Methods: This study was a semi-experimental investigation. The population under study consisted of 140 marrying couples referred to the pre-marital counseling center in Sahneh city in 2018 [experimental group; n=70 vs. control group; n=70]. The sample method was convenience sampling. The experimental group received educational intervention based on the theory of planned behavior [for 8 sessions]; whereas, the control group participated in the routine pre-marital counseling program. The data was collected using Attitudes toward fertility and childbearing scale of Soderberg, Lundgren, Christensson & Hildingsson [2013]. The data was analyzed by SPSS 20.

Results: The results showed that intervention had an effect on increasing tendency towards childbearing decision in men and women who were about to get married [$P < 0.05$]. The intervention group showed a slight decrease during the follow-up phase, but this was not significant [$P > 0.05$]. Also, the results showed that men's tendency towards childbearing in the intervention group was different in terms of income, place of residence and housing status [$P < 0.05$].

Conclusion: The results showed that the effectiveness of educational method, based on the theory of planned behavior on childbearing decision. It is recommended that, in view of the importance of childbearing in the family and social systems, in the context of pre-marriage counseling, more effective programs be provided to draw attention of the couples to childbearing at appropriate age and conditions.

Study registration : The Ethics Committee of Kermanshah University of Medical Sciences [IR: KUMS.REC.1397.514].

Introduction

Tendency to fertility and childbearing is known as the most important issue that determines the population fluctuations. This issue's related studies are more important than the other demographic phenomena (death and migration). Therefore, population policies in most countries are largely centered around reducing or increasing fertility rate [1]. Today, many developed and developing countries have experienced a total replacement level fertility and even below replacement level fertility [2]. Iran is among the countries that have experienced a sharp drop in fertility rates over the recent decades [3]. In line with this decline in fertility, the incidence of deliberate abortion have increased [4]. Pre-child counseling is an opportunity to set personalized plans, raise awareness regarding the right time to have a baby, facilitate decision-making processes for childbearing, and reduce unwanted complications and infertility [5]. Need for planned educational programs for childbearing is a widely-advertised global notion. These educational programs can help couples facilitate the decision-making process for childbearing, design and implement pregnancy plans and draw their attention to healthcare [6]. In Iran, researches conducted on childbearing educational programs have mainly focused on teaching childcare skills, social support,

increasing parents' self-efficacy, reducing children's behavioral problems and parents' stress and anxiety, and raising the quality of parent-child interactions [7–9]. These studies are practically designed for couples with children and lack the training necessary for marrying couples. Nonetheless, researches conducted outside Iran have been attempting to identify effective variables on the attitude of couples towards childbearing. These studies centered on the necessary training in the form of family health programs and community health promotion to improve the attitude of couples toward childbearing which, in turn, facilitates childbearing in couples particularly at appropriate ages [10, 11].

Given the variables affecting the attitude towards childbearing in Iran, carried out researches suggest that the main reasons for not having children include parental responsibilities, child-related social constraints and marital restrictions for parents, high costs of bearing child and pregnancy related risks for women [3]. Also, by investigating governmental incentive schemes, it is suggested that these strategies fail to increase fertility rate. Therefore, conducting more scientific and precise measures seem to be necessary. One of the theories designed to explain how a particular behavior is implemented, is the Theory of Planned Behavior [12]. This model is based on a rational theory and predicts the occurrence of a particular behavior, provided that the individual intends to perform that behavior. According to this model, the intention to perform a behavior is predicted by three factors of attitude towards the behavior, mental norms, and perceived behavioral control. Based on the assumptions of this theory, people should make their own behavioral decisions based on the reasonable information available and, also, consider the outcomes and results of their performance before making a decision [13]. The educational program based on the theory of planned behavior encompasses all the necessary elements to change behavior and maintain learned behavior in the parents [14]. This study aims at determining the effect of planned educational method on childbearing decision among marrying couples participated in pre-marriage counseling sessions in Sahneh City in 2018.

Materials And Methods

The present paper is a semi-experimental study. The statistical population of the study included all marrying couples referred to the pre-marital counseling center in Sahneh (at the time of the research). The sample size was designed with coefficient confidence of 95% ($\alpha=1$), power of 90% ($\beta=1$), and the attrition probability in each of the two intervention and control groups. Each group consisted of 70 subjects (140 people in total). Convenience Sampling was performed and subjects were randomly assigned to the intervention and control groups. The criteria for entering the study included marrying individuals (with an appointment for concluding marriage contract), being in the fertility age for women (with up to 49 years of age), having no history of divorce and marriage, referring to the Sahneh pre-marriage counseling center, resident of Sahneh (village and city), consenting to participate in the research, no mental illness and non-use of psychiatric drugs, psychotropic substances, narcotics and alcoholic beverages; also, the participants were at least literate in reading and writing. Exit criteria included disconsent with continuing the study and not attending two or more sessions of counseling.

The research tool was Soderberg, Lundgren, Christensson and Hildingsson's Attitudes toward Fertility and Childbearing Scale questionnaire[15]. The AFCS questionnaire is comprised of 27 questions and is measured via 5-point Likert scale of "strongly disagree" to "strongly agree"; as score 1 and score 5 are assigned to "strongly disagree" and "strongly agree" respectively. Earning a higher score reflects a higher tendency to childbearing. The designers of the questionnaire, while investigating and confirming the factor structure, reported optimal reliability using the Cronbach alpha coefficient. Face and construct validities of this questionnaire, in Iran, were Evaluated by Enayat and its reliability was confirmed by him with Cronbach's alpha coefficient of 0.882. Both groups participated in the pre-marriage counseling sessions in the city health center; however, the intervention group received 8 more sessions of training based on the theory of planned behavior. The interventions were in the form of lecture, questions and answers, slideshow, home assignment, group discussion, and giving books and DVDs approved by the Ministry of Health to couples to study and raise awareness. The training was conducted by the researcher during eight-weekly 60-minute sessions. The summary of intervention sessions is presented in Table 1.

Content validity of the educational interventions based on the theory of planned behavior was confirmed by the university professors. Statistical analysis was performed using SPSS-20 software. In addition to descriptive statistics, analytical statistics methods including Chi-square test, Fisher's exact test and repeated measure ANOVA were used and when the necessary assumptions were not available, Friedman test would be employed to check the hypothesis.

Table 1. Educational content curriculum

Session	Subject	Content	Objectives
1 st	Meeting the participants and explaining the program	<ul style="list-style-type: none">- Welcome, referrals, group members' acquaintance with each other, and scheduling for the sessions- Emphasizing on the confidentiality of issues raised during the sessions- General introduction to the group counseling process- Explaining the physiology of reproductive system in couples.	<ul style="list-style-type: none">- Arranging a schedule with the participants- Promoting couples' knowledge of reproductive health and high-risk pregnancies- Evaluating participants' knowledge on reproductive health
2 nd	Training participants on planned education	<ul style="list-style-type: none">- Going through the content of the previous session- Discussing the effects of thoughts on emotions, social protections and relationships involved in it- Concluding the session	<ul style="list-style-type: none">- Raise the awareness of the intervention group in relation to principles and risk factors during pregnancy,- Give home assignment [writing your feelings about pregnancy]
3 rd	Evaluating Negative thoughts and the extent of belief in them and attitudes towards pregnancy and number of children	<ul style="list-style-type: none">- Understanding their negative thoughts and promote the ability to differentiate them from reality- Examining the attitudes of couples towards fertility and childbearing, desired number of children and appropriate age for childbearing	<ul style="list-style-type: none">- Evaluating the attitudes of couples towards desire for childbearing, the number of children, and appropriate age for childbearing- Giving home assignment
4 th	Evaluating Couples attitudes towards pregnancy and desired number of children	<ul style="list-style-type: none">- Going through previous sessions and provide group feedbacks- Discussing child's effect on living happily	<ul style="list-style-type: none">- Obtaining positive attitudes towards having child
5 th	Evaluating Normal childbearing obstacles	<ul style="list-style-type: none">- Going through previous sessions and provide group feedbacks- Discussing individual's mental obstacles on the way of pregnancy and number of children	<ul style="list-style-type: none">- Eliminating negative norms regarding pregnancy and number of children

		- Concluding the session	
6 th	Evaluating Normal childbearing obstacles	- - Discussing social negative norms regarding pregnancy and the number of children - Discussing rational substitute for the mentioned norms -Concluding the session	- Eliminating and marginalize social negative norms regarding pregnancy
7 th	Controlling the perceived behavior	-Promoting positive and demoting ill thought towards childbearing - Discussing the number of children and appropriate time interval between pregnancies	- Facilitating decision making for childbearing
8 th	Controlling the perceived behavior	-Promoting positive and demoting ill thought towards childbearing -Concluding the session	- Facilitating decision making for childbearing

Table 1. Descriptive indices of demographic variables and their consistency status in the intervention and control groups

Variables			Intervention		Control		Test Statistic	P-value
			Number	%	Number	%		
Place of Residence	Men	City	20	57.1	21	60	0.059	0.500 *
		Village	15	42.9	14	40		
	Women	City	23	65.7	21	60	0.245	0.402*
		Village	12	43.3	14	40		
House	Men	Own a House	7	20	10	28.6	1.11	0.57 **
		Leased	17	48.6	13	37.1		
		Living with Parents	11	31.4	12	34.3		
	Women	Own a House	7	20	10	28.6	1.11	0.57 **
		Leased	17	48.6	13	37.1		
		Living with Parents	11	31.4	12	34.3		
Occupation Status	Men	Employed	34	52.3	31	47.7	1.938	0.356
		Unemployed	1	20	4	80		
	Women	Employed	7	87.5	1	12.5	5.081	0.055**
		Unemployed	28	45.2	34	54.8		
Educational Attainment Level	Men	Diploma and less	19	54.3	17	48.6	4.06	0.81 *
		University Level	16	45.7	18	51.4		
	Women	Diploma and less	27	77.1	22	62.9	1.09	0.30 *
		University Level	8	22.9	13	37.1		
	Men	Less than 2 million Tomans	25	47.1	27	77.1	0.30	0.78 *
		More than 2 million Tomans	10	28.6	8	22.9		

Income	Women	Less than 2 million Tomans	34	97.1	34	97.1	0.049	0.500 *
		More than 2 million Tomans	1	2.9	1	2.9		
Age	Men	Less than 30	24	68.6	30	85.7	2.97	0.15 *
		More than 30	11	32.4	5	14.3		
	Women	Less than 30	29	82.9	33	94.3	2.25	0.26 *
		More than 30	6	17.3	2	5.7		
* Fisher's exact test ** Chi-square test								

Table 2. Comparison of the means of childbearing decision in men between two groups in the study stages					
Variable / Group		Before intervention	After intervention	2 months after intervention	Statistical indices
		S.D± Mean	S.D± Mean	S.D± Mean	
Child bearing decision	Intervention	7.68 ± 91.3	7.05 ± 99.17	7.32 ± 98.6	0.001=P-value 12.59=F
	Control	1069 ± 90.45	8.32 ± 85.14	8.09 ± 85.14	0.004=P-value 6.07=F
Statistical indices		0.701=P-value 385/0=t	0.0010=P-value 7.605=t	0.001=P-value 7.308=t	
Standard Deviation S.D :					

Results

In this study, 60.7 percent of the participants were city residence, 57.1 percent were employed and 60.7 percent had high school diploma or less than a high school diploma. The monthly income of 85.7 percent of the participants, according to their own statement, was less than 2 million Tomans. Of the total number of the participants 82.9 percent had less than 30 years of age. Comparison of the demographic

variables in the research indicates that all variables are consistent between the intervention and control groups ($P > 0.05$) (Table 1).

The results of repeated measure ANOVA showed that the mean of childbearing decision in the intervention group was significant ($P = 0.001$). Also, the results of this test showed that there was a significant decrease in terms of the mean of childbearing decision in the control group ($p = 0.001$). Analysis of independent t-test for comparing the means of childbearing decision in men in each time-period showed that there was no significant difference between the groups in relation with the means of childbearing decision before the intervention ($P = 0.701$). However, after educational intervention ($P = 0.001$) and post-intervention follow up, the difference was significant ($P = 0.001$) (Table 2).

According to the findings, the interaction between the childbearing decision and the group showed that there was a significant difference ($P = 0.001$) in the changing trends of childbearing decision between the intervention and control groups during the study (Table 3).

Table 3

Comparison of means of childbearing decision among men between the two groups in the study stages

P-value	F	Mean of square	Degree of freedom	Sum of square	Source of variation
0.001	48.12	4695.47	1	4695.47	Group effect
		97.57	68	6634.74	Error

The results of Friedman test (Table 4) showed that the educational program based on the theory of planned behavior caused significant changes in the mean of childbearing decision among women in the intervention group ($P = 0.001$). In the control group, significant changes in the means of childbearing decision were observed ($P = 0.001$). Analysis of independent t-test for comparing the means of childbearing decision at each time period showed that there was no significant difference between the means of childbearing decision before the intervention between the two groups ($P = 0.396$); however, after the intervention, a significant difference was observed ($P = 0.001$). According to the findings of the Mann-Whitney test, there was a significant difference between the two groups after the post-intervention follow-ups ($P = 0.001$).

Table 4

Comparison of the means of childbearing decision among women between the two groups in the study stages

Variable / Group	Before intervention	After intervention	2 months after intervention		Statistical Indices
	S.D ± Mean	S.D ± Mean	S.D ± Mean		
Child bearing decision	Intervention	8.47 ± 89.22	10.03 ± 97.74	9.81 ± 97.28	0.001 = P-value 27.54 = Friedman Test
	Control	10.95 ± 91.22	6.63 ± 82.94	8.81 ± 86.54	0.001 = P-value 13.31 = Friedman Test
Statistical indices	0.396 = P-value 0.855 = t	0.001 = P-value 7.27 = t	0.001 = P-value -4.23 = Mann-Whitney U		

According to results of the independent t-test, there was a significant difference, in the intervention group, between income and residence status and childbearing among men ($P < 0.02$, $P < 0.04$). This association was not observed in any of the women's control and intervention groups.

According to the results of the Spearman test, in both men and women, there was a positive and significant correlation between the tendency towards childbearing and the beliefs in the negative effect of the child on welfare and comfort ($P < 0.001$) and fear of poor upbringing and financial difficulties ($P < 0/001$). In women, this correlation was, also, observed between the tendency towards childbearing and belief in the effect of having a child on hindering social activities ($P < 0.001$) and the possibility of getting physically ill as a result of childbearing ($P < 0.001$).

Discussion

Analysis of the results showed that training based on the theory of planned behavior increases the tendency towards childbearing in marrying couples. The results of the study by Ajzen [16] conducted to investigate the effect of planned behavior on promoting health-related behavior showed that changing the attitudes and mental norms along with behavioral control could lead to an increase in health-related behaviors. This effect has also been observed in other areas related to health behaviors; a study by Wiles et al [17]. carried out to investigate the effect of pre-pregnancy counseling on women with chronic renal disorders showed that training and raising awareness before pregnancy facilitate the decision-making process for pregnancy. In the effectiveness of the theory of planned behavior on behavioral changes, the results of the studies by Ajzen [16] and Donald et al [18]. are consistent. Explaining the results, it can be concluded that according to the theory of planned behavior, the most important constituent that determines the behavior of an individual is "behavioral intention". The individual's intention to perform a

behavior is a combination of attitude towards behavior, behavioral belief, evaluation of behavioral consequences, abstract norms, normal beliefs, and motivation for performing the behavior [19]. Regarding the effectiveness of the conducted intervention, it can be noted that employing the techniques for identifying the negative thoughts and differentiate them from facts, as well as showing the happy life of parents with infants via presentation of videos and slideshows, have positively affected the attitudes and mental norms of the individuals towards childbearing and led to an increase in childbearing tendencies.

In this respect, the results of the researches conducted in Iran indicate that attitudes and beliefs such as childbearing constraints, high responsibilities of the parents, social and marital restrictions for parents, high costs of childbearing, and pregnancy-related risks for women are of the most important mental impediments to childbearing among Iranian couples [3, 19]. Therefore, it can be noted that through evaluating the negative thoughts and attitudes towards childbearing and differentiating these thoughts from facts, the present intervention has, partly, been able to modify and balance negative mental norms and attitudes. The reason behind the importance of attitudes and norms in behavioral intention is that the idea of the individual regarding the results of his behavior and evaluation of these results, lead to the formation of an attitude. If one thinks that the result of a particular behavior is positive, then he will obtain a positive attitude towards it and, therefore, his tendency to perform that behavior will increase [20]. It should also be considered that the intervention was conducted in the form of group; the researcher's take-away from the atmosphere of the group's meetings was that during the final sessions, the members of the group had positive views on childbearing, which may have a positive effect on the tendency of childbearing because mental norms are also influenced by personal ideas. Individual's idea of others' expectations and his motivation to meet these expectations lead to the formation of mental norms. The one who is motivated to meet group expectations, finds a positive attitude towards the behavior; but if he thinks negatively of the group's view on the behavior and tries to meet the expectations, then negative abstract norms are likely to be formed in his mind and hinder performing the behavior [21].

Although the present study did not affect the external factors such as occupation and income status of intervention groups to improve the understanding of behavioral control in tendency towards childbearing, group discussions on fertility and childbearing and brochures and educational books were employed to strengthen the internal factors of controlling behavioral understanding (such as acquiring the necessary skills and knowledge and reducing fertility and childbearing-related stress). In this regard, a research [22] on the obstacles and needs in the way of improving the tendency towards childbearing suggests that parents need to be informed and trained on pregnancy and its changes to increase childbearing potential. Therefore, it can be concluded that the present study, trying to change and modify the negative attitudes and norms and also improve the understanding of behavioral control, has had a positive effect on the behavioral intention of the intervention groups regarding childbearing.

In the present study, an association was observed between the tendency towards childbearing with income status and the place of residence in men and fears of financial difficulties in both men and

women. It has been shown that socioeconomic factors such as educational attainment, occupation, and place of residence are the main factors in decreasing fertility and childbearing [23]. The men and women's ideas of negative impacts of infant on comfort and welfare, prevention from social activities, and the possibility of getting physically ill as a result of childbearing are other socio-economic factors observed in this study that suggest examining the association between childbearing and the other non-biological aspects of it. Fertility, aside from being biological, is always considered as a social phenomenon and to understand it, the values and beliefs, norms and, in short, the culture of each society must be studied. Therefore, for decision-making in this regard, it is logical to even consider social, cultural, economic and political changes of society including modernization, urbanization and the level of development in human societies [24].

According to the theory of planned behavior, humans are, also, logical beings who use existing information regularly and systematically and think about the concept before making a decision for doing or not doing a behavior [25]. Therefore, it can be suggested that in the intervention sessions designed for couples, the information provided in the form of group discussion, presentation of slideshows and brochures, as well as videos, have influenced the decision of couples for childbearing. In other words, the presentation of the information performed in such a way that the couples logically and without any bias tend to make decision on childbearing (by modifying negative thoughts and beliefs through group discussion and showing videos of happy aspects of the life of parents with children). Therefore, it can be assumed that when it comes to thinking about childbearing, the couples in the intervention group of this research, after participating in the sessions, have realistic and more positive idea of the notion that could reinforce their decision on childbearing.

Given that in this study participants were marrying couples, the results of the research are limited to this population and cannot be extended to the already married couples. Also, the results of this study are limited to non-clinical population and, therefore, it cannot be generalized to include clinical populations.

Conclusion

The problem of low population growth, or in other words, less tendency of couples towards pregnancy and childbearing is a major problem Iranian society has been facing over the last decade and its rising trend has worsened. The effectiveness of the present intervention reflects the need to enrich premarital programs and interventions, indicating that the current simple routine is not in line with the demographic policies and does not cover the real needs of couples before marriage. Given the importance of childbearing within family and society systems, the interventions should contribute to improving attitudes and behavioral intent in this regard.

Declarations

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Data statement: Data is held at the Nursing and Midwifery school as a section of desertation in midwifery counseling, if there is any question regarding the data, correspond with Mitra Kolivand.

Authors' contributions: Mitra Kolivand and Yahya Safari conceptualized the study with the health education model, zomorod solimaniargeneh trained and done the education sessions, Nader Salari performed the data analyses. The final article revised by all authors.

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Ethical approval: The ethical considerations included in this study were obtaining the approval of the Ethics Committee of Kermanshah University of Medical Sciences (IR: KUMS.REC.1397.514), explaining the objectives of the research to the participants and obtaining the written signed consent from them.

Consent for publication:

Due to the confidentiality of participant information, the publication of the results is not forbidden.

Competing interest: All authors have no conflicts of interest to declare.

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