# Effect of Educational Program Based on the Theory of Planned Behavior on the Childbearing Intention in One-Child Women

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**ABSTRACT**

**Aims** Childbearing is a value in Islamic Iranian culture. Due to the decrease in the total fertility rate in Iran during the three decades, following the change in population policies in 1990-2010, having one child has become a common phenomenon in the country. This study aimed to determine the effect of education on childbearing intention in one-child women based on the theory of planned behavior.

**Materials & Methods** In this interventional study in Farooj in 2018, 90 one-child women were randomly selected and assigned into intervention and control. Before the intervention, the subjects were surveyed using demographic information, planned behavior theory, and Miller's fertility motivation questionnaires. Then, based on the educational needs, four 60-minutes training sessions were provided to the intervention group for two months, and the control group did not receive training. The questionnaires were filled out by the intervention and control groups immediately and three months after training. Data were analyzed using SPSS 24 software through a significance level of 0.05.

**Findings** There was no significant difference between the two groups before the intervention regarding the mean score of perceived behavioral control, behavioral intention, positive motivation, and negative motivation towards childbearing intention and demographic variables (p>0.05). There were no significant differences in attitude scores, subjective norms, and perceived behavioral control on the childbearing intention in one-child women in both intervention and control groups (p>0.05).

**Conclusions** Social, cultural, religious, and especially economic conditions of the society are effective in improving the attitude of childbearing, which should be considered along with educational interventions to achieve better results from education.

**Keywords** Education; Intention; Women; Theoretical

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**CITATION LINKS**

[1] Exploration of underlying factors for single child ... [2] A look at the past, present and future of ... [3] Evaluation of women's satisfaction with ... [4] Determination of the most important factors ... [5] Policy implications of cultural shifts ... [6] Population BoFHa one child ... [7] A study of psychometric properties of Persian ... [8] Comprehensive book of public ... [9] The theories of reasoned action and planned ... [10] Health Behavior and Health ... [11] Factors affecting decisions to have a second ... [12] The relationship between social support ... [13] Effective education to decrease elective ... [14] Measuring the childbearing motivation ... [15] Relationship between fertility motivations ... [16] Consequences and problems of having only ... [17] A review of the use of the health belief ... [18] Behavioral intention model (BIM) application ... [19] The effect of education-based on the theory ... [20] Sex education of married women based ... [21] Prediction of delivery type based on the theory ... [22] Prediction of intrauterine device insertion ... [23] Predictive factors associated with ... [24] Evaluation of the predictive power of the ... [25] Impact of educational program based on the ... [26] Aerobic physical activity and resistance ... [27] Planning, implementing, and evaluating ... [28] Fertility intentions: An approach based ... [29] Fertility desire and its correlates: A pilot ... [30] Study of the tendency to childbearing and the ... [31] Fertility desire among Iranians living in ... [32] Grounds for low child seeking and delay in ... [33] Socioeconomic, cultural and demographic determinants ... [34] Fertility desire among Iranians: A nationwide ... [35] An assessment on the impact of women's autonomy ... [36] The sociological study of attitude to child ... [37] Application of the theory of planned behavior ...

## Introduction

The rapid decline in fertility in Iran is one of the exceptions in the world over the past decades. A fertility rate of less than 2 indicates the content of couples to have one child [1]. Based on the population and housing census in 2016-2017, changing the demographic structures and attitudes of families towards childbearing in recent decades and the implementation of birth control policies during 1990-2010 have caused a significant reduction in household size and population growth rate. It is predicted that the annual population growth of Iran will reach 1 in 2011-2031 due to the fertility decline below the successor level (1/2 child for each couple). Undoubtedly, the fertility rate with the current trend will reduce the active and dynamic population and increase the elderly population and the resulting costs [2]. Even with incentive policies to increase childbearing, the number of older people will not change in the future, and only their percentage will change [3]. Contrary to previously thought, fertility changes and a positive attitude towards having one child are due to economic issues. Cultural and social factors also play a major role in this area [4].

Many factors can play a role in the tendency to have one child. The changes in values and attitudes toward fertility in Iran over the past few decades have influenced the decisions and actions of individuals and families, especially women. The new generation considers childbearing to be costly and an obstacle to comfort and development. Parents no longer find their emotional desires toward childbearing, and they do not want to have more children; so now we are witnessing the spread of the phenomenon of having one child [5].

Following these changes, demographic experts issued warnings for planning to maintain fertility rates at the successor level. Planning to change childbearing behavior among married people requires familiarity with the target community. Therefore, recognizing their ideas, interpretations, meanings, and perceptions of childbearing and parenting, processes, interactions and mechanisms of intention and decision-making in the family about the time of pregnancy and the number of children, knowledge, emotions, concerns, and perceptions of people with the same experiences, and attitudes toward formal demographic policies and encouraging childbearing are important [6].

Indeed, the purpose of these statements is to remind that childbearing should be considered both individually and socially. In this regard, the laws and regulations, social, economic, and political factors changing this phenomenon in a society should be considered. Still, motivation, ideas, tendencies, preferences, and attitudes in individuals are important. A positive attitude towards childbearing leads to early and more childbearing, while a negative attitude in this regard reduces fertility. In addition, the first important factor in shaping a person's intention and decision to have children is an attitude, and a positive attitude is a precondition for childbearing [7]. Patterns and theories are guidelines for health education and health promotion activities [8]. One of them is the theory of planned behavior. According to this theory, the most important determinant of a person's behavior is behavioral intention. The determinants of behavioral intention in this theory are the three factors of attitude (belief in the results of behavior and evaluation of these results leads to the formation of attitude), abstract norms (influenced by one's beliefs about the expectations of others as well as one's motivation to meet those expectations) and perceived behavioral control (includes the degree to which a person feels about whether or not to perform a behavior is under his or her control and is described by two factors: controlling beliefs and perceived ability). Perceived behavioral control and intention directly predict behavior. Attitude, abstract norms, and perceived behavioral control are independent predictors of intention [9]. This model has been used more than any other model to adopt healthy behaviors such as quit cessation, quitting drinking alcohol, exercise, breastfeeding, substance abuse, sexually transmitted diseases, AIDS prevention behaviors, etc. According to this theory, the most important determinant of behavior is the intention of a person's behavior. The main determinants of behavioral intention are attitudes toward behavior and abstract norms associated with behavior.

The results of various studies on preventive behaviors using the theory of planned behavior indicate that educational intervention using this theory has been effective in behavior adoption [10].

A study by Lukšík *et al.* in Slovakia on deciding to have a second child based on planned behavior reveals that TPB's psychological model effectively explains the role of attitude, abstract norms, and perceived behavioral control in childbearing [11].

According to various studies, the intention to have children is the same conditional choice of individuals to have children, which is related to the couple's attitude toward parenthood and their perception of their living conditions. Infertility, marriage time, socio-economic status of the family, employment of women, childcare policies, stability in marital relationships, preparing to be a parent, education level, pressure from others and having parenting experience as well as the experience the childbearing of others are the factors affecting the intention and fertility behavior of couples, especially women [12].

Indeed, childbearing behavior is a behavior that is less likely to occur through the impact of educational intervention during three months, unless a fundamental change in the attitude of couples, especially women. The decision to have children is a joint decision between couples. However, women ultimately play a major role in pregnancy and childbearing, so this group's study was carried out.

Since studies based on this model have shown the effect of the educational interventions in this area, this study aimed to determine the effect of education on childbearing intention in one-child women based on the theory of planned behavior in Farooj in 2018.

## Materials and Methods

This interventional study was conducted for six months in 2018-2019 in Farooj City, Iran. The statistical population was one-child women aged 15-40. Inclusion criteria include willingness to participate in the study, having a child aged at least one year, 11 months, and 29 days, ability to read and write, Iranian nationality, living in the city of Farooj, and no contraindications for re-pregnancy and having the ability to fertility. Exclusion criteria also included not answering questions for any reason and being absent from more than one training session. The sample size was 39 people in each group, based on the study of the Sanavi *et al.* [13], considering the mean and standard deviation of the studied trait in both groups, 95% confidence level, and 80% power

of the formula for comparing the means in the two groups. According to the statistical drop, 45 subjects for each control and intervention group were determined (n=90).

To determine the samples of intervention and control groups to implement the training program based on the theory in the first stage, out of the eight comprehensive health service centers, two centers were randomly selected as the experimental and control groups by drawing lots (Comprehensive Health Service Center No. 2 and Center No. 6). These centers were close to each other, and participants could not contact each other to prevent bias. Forty-five people for each group were randomly selected considering the statistical loss and were invited to participate in the research during a telephone call (Figure 1). To comply with ethical permissions, the participants provided the necessary explanations and assured that their participation was voluntary and could cancel participation. There was no statistically significant difference between the study groups regarding demographic variables (p>0.05).
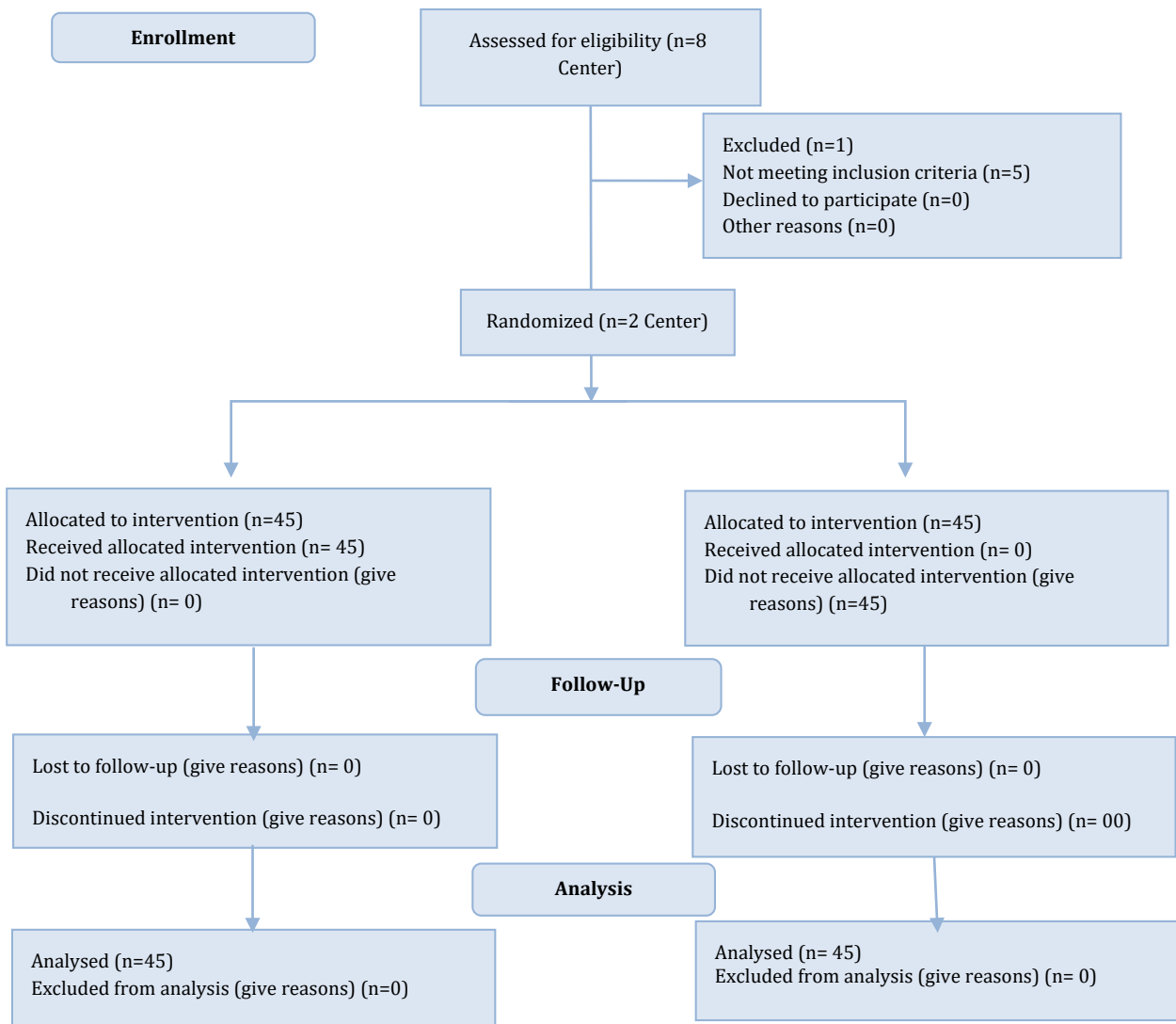


**Figure 1)** CONSORT 2010 Flow Diagram

Then, regarding the research aims, the demographic and childbearing questionnaires, planned behavior theory, and fertility motivation questionnaires were filled out by interviewing the subjects for 25 minutes. The demographic and childbearing information questionnaire consisted of 20 questions that were prepared by professors' survey, and the questions were prepared in two parts: demographic items (n=7) including age, occupation, and education of couples and household income; and items of childbearing characteristics (n=13) including the age of marriage, the lifespan of married life, age at first pregnancy, first gestational age, history of abortion, stillbirth, child death, child disability, history of infertility, the current method of contraception, the desired number of children from the perspective of the couple, and the reasons to the willingness or unwillingness to childbearing.

**Researcher-made Planned Behavior Questionnaire:** A researcher-made questionnaire was used to assess the constructs of the planned behavior theory. This tool has 25 items in 4 sections: attitude (9 items), abstract norm (9 items), perceived behavioral control (5 items), and behavioral intention (2 items). Each item was scored based on the Likert scale from I strongly disagree to strongly agree. The options of the scale were scored from 1 to 5. Items 1, 3, 5, 6, 8, and 9 of the attitude section were scored from right to left, and items 4 and 7 were scored reversely.

Therefore, the maximum score that a person could get from this section was 37, and the minimum was 17. Questions 2 to 9 were scored from right to left in the abstract norm section, and item 1 was scored reversely. Therefore, the maximum score that a person could get from this section was 41, and the minimum was 13. In the perceived behavioral control section, items 1, 4, and 5 were scored from right to left, and items 2 and 3 were scored reversely; therefore, the maximum score that a person could get from this section was 17, and the minimum score was 13. In the behavioral intention section, the maximum score that a person could achieve was 10, and the minimum score was 2. To confirm the validity of this questionnaire, face and content validity (CVI & CVR) were used; so that the questionnaire was provided to specialists, professors, and Ph.D. students in the field of health education and health promotion, and their opinions were evaluated for determining the content and face validity, clarity of linguistic appropriateness, the scale of scoring the items and the number of the items. At this stage, the subjects filled out ten questionnaires. After summarizing experts' opinions to ensure the clarity of the questions, a content validity ratio was used. According to the minimum standard values provided for the experts in the Lawshe table, the minimum value for ten experts is 0.62, which was calculated for each item and all constructs, and compared with the standard value. The items with lower values were removed. In this study, the content validity ratio for the constructs of attitude (0.74), abstract norm (0.82), perceived behavioral control (0.80), and behavioral intention (0.90) was obtained.

After determining and calculating the CVR, the content validity index was also calculated using the CVI formula, and this index was calculated for the constructs of attitude (0.97), abstract norm (0.97), perceived behavioral control (0.96), and behavioral intention (0.90). An internal correlation method was used to determine the reliability of the instrument. For this purpose, 30 people in the community, who did not enter the main study, filled out the questionnaires, and reliability was calculated using Cronbach's alpha coefficient. Cronbach's alpha test values for attitude structure (0.67), abstract norm (0.75), perceived behavioral control (0.69), and behavioral intention were calculated (0.80), and final Cronbach's alpha was 0.73.

**Miller's Fertility Motivation Questionnaire:** In addition to the researcher-made questionnaire, *Miller's* Fertility Motivation Questionnaire (53 items) was used to assess behavioral intention. It includes two parts: positive motivations (34 questions) and negative motivations (19 questions), and its validity and reliability have already been confirmed in Iran. This questionnaire is adjusted based on a 4-point Likert scale from the strongly agree to strongly disagree range. Each option of the items was scored from 1 to 4. Questions were scored from right to left. This questionnaire was used to assess the positive and negative motivation of the person in the decision to pre-pregnancy because these two variables can be related to the intent of pregnancy behavior [14]. The positive motivations factor included 34 items consisting of the joy of pregnancy, birth, and childhood (6 items), traditional perspective (6 items), satisfaction with parenting (6 items), feeling of need and survival (5 items), and instrumental use of the child (11 items). The Persian version of this questionnaire was modified to make it suitable for use in Iranian society. Seven items have been added to the positive motivations of the Miller questionnaire, which are taken from qualitative studies [15] to adapt this questionnaire to Iranian culture. Negative fertility motivation in the Miller questionnaire includes 19 items consisting of the areas of fear of parenthood (7 items), parental stress (8 items), and child care challenges (4 items). The Fertility Motivation Questionnaire was scored by a 4-point Likert scale through the range of strongly disagree (score 1) to strongly agree (score 4). Khodizadeh *et al.* evaluated the validity and reliability of the instrument using the internal consistency assessment method; the correlation between the data in the two stages of the test was 0.98, and internal consistency of the questionnaire was confirmed with an alpha coefficient of 0.91 for positive motivation and alpha coefficient of 0.94 for negative fertility motivation [15].

The educational content was prepared in the form of an educational package based on planned behavior theory emphasizing the abstract norm structure of this theory, with the highest predictive power for the childbearing intention and training objectives and course. This training package was presented in 4 sessions of 60 minutes over two months. The subjects in both groups completed the pre-test after receiving the necessary information about the study, aims, and duration of the questionnaire filling out. Then training sessions were provided to the experimental group, and the control group did not receive any training. In the training sessions, first, the group-focused discussion method was used to change the attitude. Visual educational methods were used to improve mothers' attitudes toward childbearing, including installing posters related to the subject in the training class and showing the film. The educational booklet used was also a booklet on the consequences and problems of having one child [16]. The educational items included an introduction to the importance of childbearing, new demographic policies and their changing reasons, consequences of having one child for the child and parents, consequences of having one child from the perspective of family and society, designing positive and negative motivations affecting reproductive behavior, provide suggested solutions to eliminate negative motivations and expressing the problems and obstacles of reproductive and convincing relatives about it (Table 1). Then, the final evaluation of the sessions was performed immediately after the training and three months after the educational intervention by filling out the questionnaires in the experimental and control groups and comparing them.

**Table 1)** Educational intervention program

| Sessions | Objectives | A summary of topics and activities | Educational Time (minutes) |
| --- | --- | --- | --- |
| Introduction on the importance of childbearing and new demographic policies and the reason for its change | - Express their views on having one child<br>- Mention the positive and negative motivations that affect the intention to childbearing and its impact on your quality of life.<br>- Name five things that most influence their intention to childbearing. | Focused group discussion of participants to share their opinions about having children and intending to have children | 15 |
| Consequences of having one child for the child and parents | - State at least 3 cases of one-child complications for the community and explain how to prevent it. | • Showing posters with the themes of childbearing and one-child | 15 |
| Consequences of having one child from the perspective of family and society | - Share their experiences of having one child with others according to their attitude towards this issue.<br>- Write four experiences of those around a child with the rain of thoughts on the board.<br>- Explain the importance of having children to his wife and relatives. | Provide learners' perspectives on the benefits of having more than one child for other class participants | 20 |
| Positive motivations affecting reproductive behavior | - At least share your lessons from past sessions with friends and neighbors.<br>- To prepare a list of psychological problems of an only child. | Expressing learners' experiences and positive motivation to childbearing through brainstorming for other participants | 20 |
| Negative motivations affecting reproductive behavior | - Name at least five options of negative motivations and barriers affecting reproductive behavior. | Distribution of a booklet on the consequences and problems of one child for learners | 20 |
| Provide suggested solutions to eliminate negative motivations<br><br>Expressing the problems and obstacles of the next pregnancy and convincing relatives about it | - Describe three ways to prevent psychological problems in an only child based on the consequences and problems of one child booklet.<br>- Be able to make a list of their fears about over-care for their only child and take action to eliminate them.<br>- Be able to convince her spouse and others about the disadvantages of having one child with good reasons.<br>- Be able to remove obstacles to the next pregnancy with the help of their spouse. | • Watching videos of interviews with single children<br>• Watching a few short films about the consequences of having one child<br>• Questions from learners about the points of the consequences and problems of one child booklet<br>• Focused group discussion and brainstorming about barriers to a second pregnancy<br>• Expressing learners' fears and concerns about the present and future situation of their only child<br>• Announcing the suggested solutions of learners to overcome the fear and anxiety of future pregnancies | 20<br><br>30 |

Finally, the data were analyzed using SPSS 24 software. Data were analyzed using descriptive and inferential statistical tests, including T-test, linear regression, correlation coefficient, and analysis of variance of repeated observations for variables with normal distribution, and Mann-Whitney and Friedman tests for variables with the abnormal distribution.

## Findings

Ninety single women aged 15-40 years in the intervention and control groups were studied. The mean age of the participants in the intervention and control groups were 25.5±5.4 and 25.9±5.9 years, respectively (Table 2). The majority of women in the intervention and control group were housewives (97.8%), and the age of marriage of more than half of women in the intervention (53.3%) and control (68.9%) groups were less than 18 years, and the length of the marriage of most people in both intervention (62.2%) and control (71.1%) groups was between 5-10 years. The type of delivery in both intervention (71.1%) and control (51.4%) groups were mostly normal, and more than half of the women in the intervention group (51.1%) and control group (53.3%) did not use a contraceptive method. There wasn't a significant difference in the studied variables between the intervention and control groups (p<0.05; Table 3).

There was a significant relationship (between the childbearing intention with the variables of attitude (p<0.001), subjective norms (p<0.001) and control (p<0.001) (Table 4), and the predictive power of the abstract norm construct was stronger than other constructs (Beta=0.45).

Analysis of variance of duplicate data for variables with normal distribution and the Friedman test for abnormal distribution were used to investigate the effect of training and comparing the change in the score of theoretical constructs in the two groups in three periods (before the intervention, immediately after the intervention, and three months after intervention). Standardization of the two groups was performed based on demographic characteristics. There was a significant difference between the intervention and control groups in terms of attitude

before the intervention (p=0.022), whereas there was no significant difference between the groups immediately and three months after the intervention (p<0.05). There was a significant difference in attitude between the intervention (p<0.001) and control (p=0.002) groups.

There was a significant difference in the abstract norm between the intervention and control groups before the intervention (p=0.001), but there was no significant difference between the groups immediately and three months after the intervention (p<0.05). The mean score of the abstract norm during the study in the intervention group was statistically significant (p<0.001).

There was no significant difference between the intervention and control groups regarding perceived behavioral control scores before, immediately, and three months after the intervention (p<0.05). There was a significant difference in the mean score of perceived behavioral control between the intervention (p<0.001) and control (p<0.001) groups, before, immediately, and three months after the intervention.

There was no significant difference in the behavioral intention score between the intervention and control groups before, immediately, and three months after the intervention (p<0.05). There was a significant difference in the mean score of behavioral intention in the intervention group (p<0.001), whereas no significant difference was observed in the control group (p>0.05).

The positive motivation score was not significantly different between the intervention and control groups before, immediately, and three months after the intervention (p<0.05). There was a significant difference in the mean score of positive motivation in the intervention (p<0.001) and control (p=0.006) groups before, immediately, and three months after the intervention (Table 5).

The negative motivation score was not significantly different between the intervention and control groups before, immediately, and three months after the intervention (p>0.05). There was a significant difference in the mean score of negative motivation in the intervention (p<0.001) and control (p=0.006) groups before, immediately, and three months after the intervention (Table 5).

**Table 2)** Mean±SD of quantitative demographic variables in both intervention and control groups

| Variable | Control group | Intervention group | Test result |
|---|---|---|---|
| Female age | 5.92±25.86 | 5.42±25.5 | $Z^a$=-1.02 p=0.360 |
| Male age | 9.44±32.75 | 4.76±32.17 | $Z^a$=-0.49 p=0.620 |
| The desired number of children in terms of the woman | 0.92±2.28 | 0.95±2.24 | $Z^a$=-0.17 p=0.860 |
| The desired number of children in terms of man | 1.04±2.08 | 0.76±2.04 | $Z^a$=-0.54 p=0.580 |

a: Mann-Whitney

**Table 3)** Frequency and percentage of qualitative demographic variables in both intervention and control groups before intervention

| Variables | Control group Number (%) | Intervention group Number (%) | Test result |
|---|---|---|---|
| **Female education level** | | | |
| Sub high school | 24 (53.3) | 20 (44.4) | $\chi^2 = 0.71$ |
| Above high school | 21 (46.7) | 25 (55.6) | p=0.393* |
| **Male education level** | | | |
| Sub high school | 34 (75.6) | 34 (75.6) | $\chi^2 = 0$ |
| Above high school | 11 (24.4) | 11 (24.4) | p>0.997* |
| **Occupational status of women** | | | |
| Housewife | 44 (97.8) | 44 (97.8) | $\chi^2 = 0$ |
| Employee | 1 (2.2) | 1 (2.2) | p>0.997* |
| **Occupational status of men** | | | |
| Farmer and rancher | 5 (11.1) | 7 (15.6) | $\chi^2 = 1.75$ |
| Worker | 20 (44.4) | 24 (53.3) | p=0.410* |
| Free | 20 (44.4) | 14 (31.1) | |
| **Marriage age** | | | |
| 18> | 31 (68.9) | 24 (53.3) | $\chi^2 = 3.67$ |
| 30-18 | 13 (28.9) | 21 (46.7) | p=0.125* |
| 30> | 1 (2.2) | 0 | |
| **Length of marriage** | | | |
| 5> | 5 (11.1) | 8 (17.2) | $\chi^2 = 1.01$ |
| 10-5 | 32 (71.1) | 28 (62.2) | p=0.618* |
| 10> | 8 (17.2) | 9 (20.0) | |
| **Age at the first pregnancy** | | | |
| 18> | 12 (26.7) | 12 (26.7) | $\chi^2 = 0.3$ |
| 30-18 | 30 (66.7) | 31 (68.9) | p>0.996* |
| 30> | 3 (6.7) | 2 (4.4) | |
| **History of abortion** | | | |
| Yes | 8 (17.4) | 10 (22.2) | z = 0.27 |
| No | 37 (82.2) | 35 (77.8) | p=0.591 |
| **History of stillbirth** | | | |
| Yes | 1 (2.2) | 1 (2.2) | z = 0 |
| No | 44 (97.8) | 44 (97.8) | p>0.999 |
| **Child death history** | | | |
| Yes | 2 (4.4) | 2 (4.4) | z = 0 |
| No | 43 (95.6) | 43 (95.6) | p>0.999 |
| **Presence of a congenital or genetic defect or abnormality in the child** | | | |
| Yes | 0 | 1 (2.2) | z = 1.01 |
| No | 45 (100) | 44 (97.8) | p =0.314 |
| **Type of delivery** | | | |
| Natural | 23 (51.4) | 32 (71.1) | z = 3.78 |
| Cesarean section | 22 (48.9) | 13 (28.9) | p=0.052 |
| **History of infertility** | | | |
| No | 42 (93.3) | 42 (93.3) | z = 0 |
| Primary infertility | 1 (2.2) | 1 (2.2) | p>0.999 |
| Secondary infertility | 2 (4.4) | 2 (4.4) | |
| **Method of contraception** | | | |
| Does not have | 24 (53.3) | 23 (51.1) | $\chi^2 = 6.58$ |
| Combined hormones | 5 (11.1) | 8 (17.8) | p=0.073* |
| Condom | 11 (24.4) | 4 (31.1) | |
| IUD | 5 (11.1) | 0 | |
| **Woman's willingness or unwillingness reasons for next pregnancy** | | | |
| Economic security | 33 (73.3) | 33 (73.3) | $\chi^2 = 1.8$ |
| Free insurance | 3 (6.7) | 2 (4.4) | p=0.681* |
| Woman's physical and mental fitness | 6 (13.3) | 9 (20.0) | |
| Children age differences | 3 (6.7) | 1 (2.2) | |
| **Income** | | | |
| 500000> | 21 (46.7) | 26(57.8) | $\chi^2 = 3.2$ |
| 1000000-500000 | 17 (37.8) | 17 (37.8) | p=0.227* |
| 1000000> | 7 (15.6) | 2 (4.4) | |

*Chi-square

**Table 4)** Predicting the constructs of the theory of planned behavior on the childbearing intention in one-child women (p<0.001)

| Childbearing Intention | Coefficient | The standard error | Beta | T |
|---|---|---|---|---|
| **Attitude** | 0.23 | 0.02 | 0.29 | 8.67 |
| **Subjective norm** | 0.22 | 0.01 | 0.45 | 12.78 |
| **Perceived behavioral control** | -0.59 | 0.07 | -0.25 | -7.86 |

**Table 5)** Mean±SD of theory structures in intervention and control groups, before, immediately, and three months after educational intervention

| Structure | Before intervention | Immediately after intervention | Three months after the intervention | Immediately compared to before intervention | Three months after the intervention compared to before intervention | p-value |
|---|---|---|---|---|---|---|
| **Attitude** | | | | | | |
| Intervention | 29.71±3.66 | 30.22±3.74 | 29.77±3.05 | 0.51±5.56 | 0.6±4.91 | <0.001 |
| Control | 31.48±3.92 | 1.95±4.83 | 32.06±4.87 | 0.46±6.88 | 0.57±6.16 | 0.002 |
| Test result | t=-2.22[a] | z=-1.41[b] | z=- 2.005[b] | z=-0.04[b] | z=-0.25[b] | - |
| | p=0.022 | p=0.158 | p=0.041 | p=0.967 | p=0.853 | |
| **Subjective norm** | | | | | | |
| Intervention | 29.17±3.36 | 29.93±5.06 | 31.24±4.22 | 0.75±5.71 | 2.06±4.41 | <0.001 |
| Control | 31.88±3.83 | 30.55±2.87 | 30.15±4.35 | -1.33±5 | -1.73±6.04 | 0.060 |
| Test result | z=-3.31[b] | z=-1.2[b] | t=-1.11[b] | z=-1.84[b] | z=-3.52[b] | - |
| | pvalue=0.001 | p=0.224 | p=0.266 | p=0.0695 | p<0.001 | |
| **perceived behavioral control** | | | | | | |
| Intervention | 15.17±2.9 | 15.42±2.8 | 14.84±3.08 | 0.24±4.32 | 3.86±0.33 | <0.001 |
| Control | 15.66±2.38 | 15.6±2.58 | 15.86±1.94 | -0.06±3.33 | 0.2±3.5 | <0.001 |
| Test result | z=- 0.815[b] | z=- 0.161[b] | z=-0.968[b] | z=-0.349[b] | z=-3.52 [b] | - |
| | p=0.417 | p=0.875 | p=0.334 | p=0.732 | p=0.711 | |
| **Intention** | | | | | | |
| Intervention | 5.35±2.44 | 5.42±2.29 | 5.17±2.13 | 0.06±3.31 | -0.17±2.83 | <0.001 |
| Control | 5.02±2.45 | 5.6±2.57 | 4.73±2.57 | 0.57±3.1 | -0.28±3.65 | 0.181 |
| Test result | t=-2.22[b] | z=1.41[b] | z=-2.005 [b] | z=-0.04 [b] | z=-0.25[b] | - |
| | p=0.029 | p=0.152 | p=0.044 | p=0.961 | p=0.831 | |
| **Positive motivation** | | | | | | |
| Intervention | 102.24±16.08 | 104.42±17.53 | 108.13±15.71 | 24.87±2.17 | 20.94±5.88 | <0.001 |
| Control | 109.15±15.83 | 107.6±16.17 | 102.08±17.63 | -1.55±21.17 | -7.06±23.03 | 0.006 |
| Test result | z=-1.68[b] | z=-1.04[b] | z=-1.83[b] | z=0.76[b] | z=-2.84[b] | - |
| | p=0.092 | p=0.293 | p=0.064 | p=0.449 | p=0.004 | |
| **Negative motivation** | | | | | | |
| Intervention | 46.24±7.62 | 45.71±5.67 | 46.42±5.52 | -0.53±10.23 | 0.17±8.29 | <0.001 |
| Control | 47.97±5.69 | 46.88±4.44 | 45.93±8.12 | -1.08±7.38 | -2±0.04 | 0.006 |
| Test result | t=-1.22[a] | z=-0.9[b] | t=0.33[a] | t=0.29[a] | t=1.15[a] | - |
| | p=0.226 | p=0.364 | p=0.731 | p=0.769 | p=0.251 | |

a: Independent T-test; b: Mann-Whitney

## Discussion

The application of planned behavior theory predicts and understands behavior and includes the behavioral spectrum from behavior change, behavior intention to behavior display, the effect of which its effect has been confirmed empirically in many studies [10, 17].

Many studies have shown that the theory of planned behavior has influenced women's reproductive behaviors [18], childbearing intention to have children of married women with one child [19], intention to have sex in married women [20], the type of delivery [21], predicting IUD usage behavior [22], breastfeeding behavior of mothers [23], intention to solve the problem of infertility, receiving pre-pregnancy care [24], breastfeeding knowledge and practice in primiparous women's experiences [25], aerobic physical activity and resistance training in adults with type 2 diabetes [26]. However, the results of this study showed that the planned behavior theory could only be partially effective on the constructs of the abstract norm and behavioral intention. According to the theory of planned behavior, the most important factor determining the behavior of each individual is the behavioral intention, which is perceived under the influence of attitude structure, mental norms, and behavioral control [22].

The findings of some studies based on the planned behavior theory regarding women's childbearing intention confirmed the effect of the constructs of the planned behavior theory on women's behavioral intention and other underlying factors. For example, the study by Ajzen & Klobas [28] showed that the theory of planned behavior could be useful for further understanding childbearing goals. The important criteria leading to this decision can be identified by examining behavioral normative and control beliefs about childbearing. However, contextual factors such as nationality, general values of life, attitudes toward childlessness, personality traits, religion, and demographic variables such as age, housing conditions, income, and education play an important role in reproductive tendencies. However, contextual factors such as nationality, general values of life, attitudes toward childlessness, personality traits, religion, and demographic variables such as age, housing conditions, income, and education play an important role in childbearing tendencies. In addition, the results showed that the application of the theory of planned behavior in large-scale studies could provide very useful information about childbearing decisions. The findings of a study by Lukšík also confirmed that sociological variables such as having a suitable job

and housing, stable marital status, access to kindergarten, and babysitting, along with psychological factors of the theory of planned behavior, play an important role in the couple's decision-making process within the next three years. The results of descriptive analysis showed that among the demographic variables, only the income of individuals had a significant relationship with childbearing intention (p=0.04), and it was found that people with incomes above one million Toman have a higher average intention to have children. Other demographic variables had no significant relationship with childbearing intention (p<0.05).

The results of Tavousi *et al.* [29] showed a significant relationship between unwillingness to childbearing with variables such as older age, younger age of marriage, having more children, fewer stillbirths, and abortions. In addition, the reluctance to childbearing in people with a "bad/very bad" income is about 2.82 times that of people with a "good/very good" income. Amininsab *et al.* [30] found that economic factors are the important factor to childbearing according to the subjects' opinion. In this research, children were considered future profiteers, but today to move from traditional to modern societies and even beyond, children are profitable and impose high costs on families for reasons such as unemployment. Therefore, many people, despite their inner desire, decide to reduce childbearing. Afarini *et al.* [12] showed that demographic factors including age, women's education level, and family economic status were the main determinants of women's intention to have children, and it is necessary to improve the economic situation of families to promote childbearing.

In this study, the subjects had no university education and were housewives, and economic insecurity is the most important reason for unwillingness to childbearing for most of them (more than 90%). In another study by Tavuosi *et al.* [31], the common reasons for reluctance to childbearing were, respectively, worries about securing the future of new children, worries about economic problems by having another child, and the sufficient number of current children, respectively, and the important reason for the reluctance to childbearing economic problems. In Razavizadeh *et al.* [32], parents' economic and welfare concerns and restrictions were among the most important parent-centered concerns about low childbearing opportunities and delays in childbearing. In the study of Hosseini *et al.* [33], the most important reasons for preferring the one-child pattern were determined by economic problems and the problem of families in raising their children, respectively. The results of this study showed that demographic policies to prevent further decline in fertility should focus on employment, family, and quality of life, especially among women without children, one-child women, and newly married couples. The results of most studies in this regard

show that economic status is an important factor in health outcomes and the desire to have more children.

Although the planned behavior theory has been reported as a useful model for predicting and modifying behavior by relying on important constructs, including attitudes, abstract norms, perceived behavioral control, and behavioral intention, this theory has not been effective in the present study; therefore, more studies should be done in this field. Among the reasons for the inconsistency between the results of this study and other similar studies are the differences in the economic status of the target group, demographic characteristics, and the tools. Decision-making to childbearing is one of the major events in a couple's life, which is influenced by many aspects of life such as health, economic status, welfare, and family culture [34].

Various studies have examined different reasons and perspectives for reducing childbearing intention. For example, Abbasi Shavazi and Khajeh Salehi [35] showed that the desire for childbearing decreases with increasing the level of education and social participation of women. The increase in the education level and the widespread entry of female students into universities in recent years in Iran has led to profound changes in women's ideas and behavior, which some studies have identified as an influential factor in women's reproductive behavior. Because entering university and increasing the level of education affects fertility through changes in individual attitudes and beliefs and the formation of modern attitudes, indirectly and through raising the age of marriage, directly and thus delaying the age of childbearing. Also, social media and networks, friendship groups, classes and educational, recreational and social, and cultural facilities have led to women joining these associations, even with no have higher education or occupation, and it means that women spend more time outdoors and have fewer children to follow up such activities. In a study by Mobasheri *et al.* [4], it was found that the three factors of increasing costs and economic pressure, the lack of support and welfare facilities from the government for childbearing, and the misconception that "having more children is a sign of a weaker social culture" are the important factors affecting childbearing.

The research of Kalantari *et al.* [36] also showed that the variable of social participation has a decreasing effect, and the variable of religious orientation has an increasing effect on the tendency of young people to childbearing.

In a study by Li & Fan [37], factors influencing decision-making for fertility were the need for a fixed income and the cost of raising a child, child sexual preference, parental health, as well as other important factors influencing fertility intention, including ethnicity and education level. Couples in ethnic minorities have

less understanding of social norms affecting fertility, and people with higher education have more perceived behavioral control over having the next child.

The limitations of this study were individual differences, psychological state, and accuracy of the subjects in filling out the questionnaires. The possibility of affectability of the participants in the test and control groups from other information sources was also considered one of the limitations.

It is suggested to study spouses in the educational intervention of the planned behavior theory. Given the important role of religious beliefs among Iranians, especially in smaller communities such as cities and villages, it is suggested to study some variables appropriate to Iranian society, such as religious beliefs related to the childbearing intention in designing questions for research constructs. Also, it is suggested to use different models, examining the individual and social factors simultaneously and comparing the results in the subjects with different demographic characteristics. To influence the factor of mental norms, interventions should be designed to train key people.

## Conclusion

The theory of planned behavior does not affect the childbearing intention of one-child women, indicating a need for further studies in this area.

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