ORIGINAL ARTICLE

The Relationship of Socio-Demographic Factors, Fertility Behavior and Child's Perceived Value with Fertility Intention of Women in a Region in the East of Iran

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ABSTRACT

Background: Fertility intention is one of the strongest predictors of couple's fertility behavior that is affected by many variables. This study aimed to identify the relationship of socio-demographic factors, fertility behavior, and child's perceived value with fertility intention of women in a region in the east Iran

Methods: In this descriptive cross-sectional study, 241 married women aged between 15 and 49 years of Torbat Heydariyeh City in 2015, were studied. The data collection scales included a demographic information form, fertility information questionnaire and Trommsdorff's child value questionnaire. Data were analyzed using SPSS 16 by Chi-square, Kruskal–Wallis, t-independent test and logistic regression. The significance level of $P<0.05$ was considered.

Results: Most of the subjects (52.7%) had no fertility intention. Independent-samples test and Kruskal–Wallis revealed significant differences in fertility intention with the subject's age, mate's age, number of children and costs of children (P=0.001). In addition, in subjects with children of both sexes, intention for childbearing was significantly lower when compared to subjects with only one sex in children (P=0.001). However, when the logistic regression test was performed, being housewife, number of children, having children of both sexes, benefit and costs of children showed statistical significance (P<0.05).

Conclusion: The results indicate that being housewife, number of current children, having children of both sexes, and perceived childbearing costs are important in determining the odds that a woman will intend to have a child. These findings can contribute to the realization of new population programs towards higher fertility rate in the country.

KEYWORDS: Fertility, Intention, Demography, Reproduction, Women

INTRODUCTION

Fertility is one of the main components of population growth, that extensive research has been conducted to examine factors influencing it. The decline in fertility rate has not only definitely influenced composition and structure of the population of a country, but also it has diminished economic growth in the long run.[1] The continuous decrease in reproduction and transformation from natural fertility to controlled fertility are gradually changing the young age structure of population into an old age structure. Due to this transformation, in Iran, it is astonishing that the ratio of the population below 15 years has dropped from 45% in 1986 to lower than 30% in 2006. According to the announcement by the World Bank, the population growth rate in Iran will reach 1.13% between 2020 to 2024, and it will reduce to less than 1% by 2025.[2] Some of the consequences of population aging include the decrease in the young and economically useful population and the work force of the country and an increase in the costs incurred by providing care for the elderly.[3]

Early detection of population problems helps to realize the realities and their causes. Hence, it is highly evident that one of the substantial priorities of developing countries, including Iran, is to consider population studies, especially the ones associated with fertility because of its important role in population growth.[4] In this regard, fertility intention plays an important role in the formation of subsequent fertility tendencies. Based on several studies, this variable is the strongest predictor of subsequent fertility behaviors of the couples.[5,6] For instance, results of one study in Iran indicated that the tendency and intention for having more children along with a history of child death, preference for male children, lower education levels, and marriage age of below 15 years are accompanied by a higher number of pregnancies.[7] The childbearing intention is also influenced by numerous variables.[8] Demographic factors such as age and marital status, the number of children already born and social factors such as employment status, income, level of education, are expected to impact the fertility behaviors.[9-11] For instance, recent previous studies show that highly educated people intend to have more children than less educated women.[12] Also, the results of one study on Roman women also indicated that the woman's age, number of children and opinion of important people about the number of children significantly influence the woman's intention for future fertility.[8] Measuring the contribution of each of them in fertility intentions makes it possible to determine fertility trends based on these factors to develop effective strategies for adjusting the country's future population.

Another possible factor influencing the fertility rate and fertility intention is the child's value, which is considered the essence of the parents' assessment of their children. Positive values include emotional and economic interests, identity acquisition, achievement of perfection, and survival of family. Negative values include emotional, physical, economic and family costs; restrictions; and lost chances.[13]

Numerous theories on the effect of child's value on fertility have been proposed. One of these theories is the economic theory, which considers children as economic commodities. In this theory, fertility behavior in families is considered as a function of the law of supply and demand and the cost and benefits of children.[1]

Among economic theories, the Leibenstein theory assumes that the children's economic profit influences the decision of parents on the number of children. In this theory, the child's economic dimension is related to a higher fertility rate, but the emotional dimension is not related to increased fertility.[14] The reason is that emotional dimension is supplied by the presence of only one or two children.[15] Actually, emotional dimension is more prominent in prosperous societies where raising children is expensive and children don't contribute to family economy and old age security.[16]

The next theory is about the social effects of childbearing. Having a child alters its parents' personal relationships and social environments. It affects the nature of the relationship between mother and father; their relationships with friends, relatives and neighbors; and changes their position in the society.[17]

Results obtained regarding the effect of the child's benefits and costs on fertility behavior of the couples are different.[18] For instance, there is no significant relationship between the dimensions of child's value and fertility rate in women of reproductive age in Mashhad, Iran.[18] However, the relationship between the child's value and fertility intention was significant in another study.[19]

In general, limited available studies have been carried out to identify the possible factors influencing fertility intention both inside and outside the country.[12,20,21] These studies are useful for guiding reproductive health program planners and policymakers to understand various factors influencing fertility in order to assist in the implementation of a reproductive health program that will increase fertility rate to higher than replacement level. Due to the importance of fertility and contradictions in different studies, the necessity of conducting these studies on various populations and cultures is evident. In addition, most of these studies only examined the relationship between one of these factors with fertility intention. Hence, considering the importance of identification of collective effect of the factors influencing people's fertility intention and the lack of similar studies in Torbat Heydariyeh City, the present research was carried out to determine the relationship of socio-demographic factors, fertility behavior, and child's perceived value with fertility intention of reproductive age women in this region in 2015.

MATERIALS AND METHODS

This was a descriptive cross-sectional study carried out on 241 women visiting health centers of Torbat Heydariyeh City during May to September 2015. The sample size was estimated to be 239 women using Cochran's formulas ($N = \frac{z^2 \times pq}{d^2}$) in which d, and p were respectively equal to 0.053, 0.05.With an assumed 10% sample loss, 262 subjects were included in the study. Finally, after discarding the incomplete questionnaires, 241 subjects remained. The sampling framework included all of the health centers of Torbat Heydariyeh City. In each of these centers, sampling was carried out using convenience sampling method in proportion to the number of the population under coverage and in accordance with the research inclusion criteria.

The research inclusion criteria were as follows: being married and in the reproductive age group 15-49 years living in Torbat Heydariyeh City, Iranian citizenship, being literate enough to read and write, and being the biologic mother of their children. Moreover, all the children should be the result of marriage of the woman with her husband. Pregnant women, women with a history of infertility, women with children from previous marriages, those who used sterilization methods or whose husbands used sterilization methods, and women with physical and mental abnormalities were excluded from the research.

Data were collected using a demographic information form, the fertility information form, and the child's costs and benefits questionnaire. In addition, fertility intention was assessed based on the responses to the following question and was used as the fertility intention: "Do you intend to become pregnant in the three coming years?"

The demographic information form included information on the woman's age, husband's age, woman's job and education and husband's job and education, and family income.

The questionnaire on fertility behavior also contained questions on the age of the persons at the time of marriage, number of children, children's sex, history of child loss, contraception method and woman's experience of previous childbirths.

To assess the contraception method in the research units, the following two classifications were used: traditional method include withdrawal and periodic abstinence and modern method include the pill, injection methods, condom, intrauterine device (IUD) or other modern methods, excluding male or female sterilization.

The child's benefits questionnaire is derived from Trommsdorff's child value questionnaire (2002) and consists of 27 sections. The items are ranked from "completely unimportant" (rank 1) to "very important (rank 5)" based on the five-point Likert scale. In this scale, results are classified for the following dimensions: emotional (7 statements), economic(6 statements), and social(14 statements).

The child's costs questionnaire is also derived from Trommsdorff's child's value questionnaire (2002) and consists of 19 sections. The items in this scale are also ranked from "completely unimportant" (rank 1) to "very important" (rank 5) based on the five-point Likert scale. Results are classified for the following dimensions: emotional (4 statements), economic(11 statements), and social(4 statements).[13]

To compare all dimensions in costs and benefits questionnaire, the mean scores of each of them were computed. Higher scores were considered the sign of higher child value in the respective dimension in both scales.[19]

In this research, the validity of the fertility behavior and demographic information form was confirmed. Validity of child costs-benefits questionnaire was also confirmed by Trommsdorff through a content validity method. Validity of the Persian version of this questionnaire was also confirmed by Fazeli et al.[18] In this study, reliability of the child's costs and benefits questionnaires was confirmed with respective Cronbach's alpha values of 0.91 and 0.77. The collected information was analyzed in SPSS16 statistical software and the following tests were used to attain the research goals: descriptive statistics included mean, frequency and percent age, t-independent test, Kruskal–Wallis test and the Chi-square test. Moreover, to evaluate the role of each research variable in the subjects' fertility intention prediction, we employed the logistic regression analysis method. All of the quantitative, ordinal, and categorical variables were entered into this model. In all of these tests, the significance level of 5% and power of 80% were considered.

Ethical Consideration

This study was conducted after obtaining the confirmation of the Torbat Heydariyeh Ethics Committee and the written informed consent from all subjects participating in the study (code: IR.THUMS.REC.1394.2).

RESULTS

The mean age of the subjects was 31.12 ± 6.61 years, and that of the subjects' husbands was 36.15 ± 7.14. A large number of women under the study (57.3%) had married before the age of 20. Most of these women were high school graduates (37.3%) and housewives (74.3%). The average number of children of the subjects was 1.85 ± 0.99, which ranged from 1 to 6 (Table 1).

The average childbearing benefits score of women was 82.02 ± 20.56 from the 27-135 range, whereas the average childbearing costs score was 50.75 ± 14.45 from the 15-95 range. Of the three dimensions of childbearing benefits, the highest score belonged to the emotional dimension. Emotional costs also accounted higher scores than other dimensions of perceived costs of childbearing (Table 2).

According to our results, 52.7% of the subjects (127 women) had no fertility intention. According to the Chi-square test, there was no significant difference in the subject's future fertility intentions based on education, employment status, mate's job, and income levels (Table 3). However, as shown by the Kruskal–Wallis test, age and husbands' age mean scores were significantly lower in subjects with fertility intention (Table 4).

Results of the Chi-square test revealed no significant difference in the fertility intentions of the subjects based on a history of fetal or

Table 1: Demographic and fertility characteristics of the studied women

Variables		N (%)
Age at first marriage	Less than 20	138 (57.3)
	20-25	83 (34.4)
	26-30	19 (7.9)
	31 or more yrs	1 (0.4)
Literacy status	Primary level	23 (9.5)
	Secondary level	38 (15.8)
	Diploma	90 (37.3)
	Above diploma and bachelor's degree	78 (32.4)
	Masters and above	11 (4.6)
Husbands' Literacy status	Primary level	22 (9.1)
	Secondary level	50 (20.7)
	Diploma	84 (34.9)
	Above diploma and bachelor's degree	71 (29.5)
	Masters and above	14 (5.8)
Occupation	Housewife	179 (74.3)
	Employee	44 (18.3)
	Worker	18 (7.5)
Husbands' Occupation	Not working	11 (4.6)
	Self-employment	131 (54.4)
	Worker	33 (13.7)
	Employee	66 (27.4)
Income status	Less than sufficient	36 (14.9)
	Sufficient	173 (71.8)
	More than sufficient	32 (13.3)
Child death experience	Yes	10 (4.1)
	No	231 (95.9)
Attitude to previous childbirth	Easy	36 (14.93)
	Normal	122 (50.62)
	Hard	82 (34.02)
Having both sexes in the composition of the children	Yes	162 (67.2)
	No	79 (42.8)
Contraceptive method	Modern	110 (45.6)
	Traditional	131 (54.4)

Table 2: Mean score of benefits and costs of children and their subscales in subjects

Value of Children Aspects		Minimum	Maximum	Mean±SD
Benefits	Emotional	1.00	5.00	3.52±0.92
	Economical	1.00	5.00	2.87±0.90
	Social	1.00	5.00	2.86±0.80
Costs	Emotional	1.00	5.00	2.73±0.91
	Economical	1.00	5.36	2.70±0.79
	Social	1.00	5.00	2.52±0.87

child death, experience of previous childbirths and type of the contraception in use. However, based on the results of this test, fertility intention was significantly lower in subjects with children of both sexes than the other group (P=0.004) (Table 3). According to the Kruskal–Wallis test, the subjects with fertility intention showed a significantly higher number of children when compared to subjects without fertility intention (P<0.05) (Table 4).

In addition, the t-independent test results showed that the mean score of childbearing costs was significantly lower in women with fertility intention. However, perceived

Table 3: Comparison of demographic and fertility characteristics between the subjects with and without fertility intention

Variables		Fertility intention		P value
		Yes	No	
		N (Percent)	N (Percent)	
Literacy status	Primary level	9 (7.9)	14 (11.0)	0.15
	Secondary level	15 (13.2)	23 (18.1)	
	Diploma	40 (35.1)	50 (39.4)	
	Above diploma and bachelor's degree	45 (39.5)	26.0 (33)	
	Masters and above	5 (4.4)	4.7 (6)	
Husbands' Literacy status	Primary level	11 (9.6)	11 (8.7)	0.98
	Secondary level	22 (19.3)	28 (22.0)	
	Diploma	39 (34.2)	45 (35.4)	
	Above diploma and bachelor's degree	35 (30.7)	36 (28.3)	
	Masters and above	7 (6.1)	7 (5.5)	
Occupation	Housewife	85 (74.6)	74 (94)	0.97
	Employee	21 (18.4)	23 (18.1)	
	Other	8 (7.0)	10 (7.9)	
Husbands' Occupation	Not working	4 (3.5)	7 (5.5)	0.64
	Self employment	65 (57)	66 (52)	
	Worker	13 (11.4)	20 (15.7)	
	Employee	32 (28.1)	34 (26.8)	
Income status	Less than sufficient	16 (14.0)	20 (15.7)	0.42
	Sufficient	86 (75.4)	87 (68.5)	
	More than sufficient	12 (10.5)	20 (15.7)	
Child death experience	Yes	6 (5.3)	4 (3.1)	0.31
	No	108 (94.7)	123 (96.9)	
Experience of previous childbirth	Easy	16 (14.0)	20 (15.7)	0.21
	Normal	52 (45.6)	70 (55.1)	
	Hard	45 (39.5)	37 (29.1)	
Having both sexes in the composition of the children	Yes	9 (7.9)	69 (54.3)	0.001
	No	104 (91.2)	58 (45.7)	
Contraceptive method	Modern	46 (40.4)	64 (50.4)	0.08
	Traditional	68 (59.6)	63 (49.6)	

*Chi-square

Table 4: Comparison of demographic and fertility characteristics and value of children in subjects with and without fertility intention

Variables	Fertility intention		P value
	Yes	No	
	Mean±SD	Mean±SD	
Age	27.68±4.83	34.20±6.48	0.001
Husbands' age	32.38±5.17	39.54±6.98	0.001
number ofchildren	1.22±0.57	2.31±0.95	0.001
Benefits of children	82.87±20.88	81.26±20.33	0.54
Costs of children	45.61±13.53	55.37±13.71	0.001

*Independent-T

childbearing benefits and its dimensions had no significant difference in the two groups (P>0.05) (Table 4).

To determine the contribution of each variable to the probability of existence of fertility intention in subjects, the logistic

regression method was utilized. As shown in Table 5, the probability of fertility intention was reduced 0.24, 0.28, 0.26, and 0.93 times in the case of housewives, having children of both sexes, high number of children, and high childbearing costs. Based on the results of this test, odds of having fertility intention increased1.02 times with each score increase in childbearing benefits (Table 5).

DISCUSSION

Research results on the factors influencing the fertility intention were examined and discussed in three separate sections.

Demographic and Socio-Economic Variables Associatedwith Fertility Intention

In this study, there was a significant difference in fertility intention in terms of age and husbands' age. However, after entering these variables into logistic regression for controlling the possible effect of confounders, these variables have no contribution to the probability of existence of fertility intention. Inconsistent with these findings, the result of two studies in Rome and Ethiopia showed a significant inverse relationship between women's age and fertility intention.[8,22]

Moreover, similar to the Roman study, there was no significant difference between the future fertility intentions of the subjects based on educational level, couple's employment status, and income in the present study.[8] However, being a housewife negatively affects the probability of intending to have a child.

Quite the contrary, results of a research suggested that more educated German men and women showed a higher tendency toward a higher number of children as compared to averagely educated women and men.[12] Based on the explanations of these studies, formal education may lead to a higher level of self-confidence, the ability for coping with the family stress and pressures, and the ability to accept the father's and mother's roles. These findings were approved by some other studies.[23,24] However, in most studies, the actual fertility level in educated women was lower than others.[11,23-25] In this study, these results are also not confirmed.

Results of a study in Italy also showed that the effect of male employment insecurity on fertility intention was not statistically significant. Unlike this study, in a mentioned research, the low family income led to

Table 5: Results of logistic regression analysis of prognostic factors for fertility intention

Variables		B	S.E	Odds ratio (OR)	95% C.I. for OR	P value
Age		-0.05	0.05	0.95	0.86-1.06	0.36
Husbands' age		-0.09	0.05	0.92	0.83-1.01	0.09
Literacy Level		-0.01	0.26	0.99	0.59-1.65	0.96
Husbands' Literacy Level		-0.40	0.25	0.67	0.41-1.10	0.11
Occupation(Reference: other)	Housewife	-1/40	0.70	0.24	0.06-0.97	0.04
	Employee	-0.14	0.60	0.87	0.27-2.83	0.82
Husbands' Occupation (Reference: Employee)	Not working	-0.46	1.05	0.63	0.08-4.88	0.66
	Self employment	-0.09	0.50	0.91	0.34-2.44	0.85
	Worker	-0.70	0.85	0.49	0.09-2.63	0.41
Income status		-0.43	0-.41	0.65	0.293-1.44	0.29
Child death experience		0.14	0.85	1.14	0.22-6.06	0.87
Experience of previous childbirth		0.14	0.85	0.96	0.51-1.67	0.89
Having both sexes in the composition of the children		-1.34	0.56	0.26	0.09-0.79	0.02
Contraceptive method(Reference: Modern Traditional)		0.007	0.39	1.06	0.47-2.17	0.89
Number of children		-1.35	0.41	0.26	0.11-0.58	0.001
Benefits of children		0.02	0.12	1.02	1.00-1.05	0.05
Costs of children		-0.08	0.17	0.93	0.89-0.96	0.001

postponement of fertility and tendency to breed fewer children.[26] These differences can be ascribed to the cultural and regional differences governing different parts of the world or even a country.

Fertility Behaviors Associated with Fertility Intention

Similar to a study conducted in Iran, the result of the present study revealed an inverse relationship between parity and fertility intention in women.[19] Moreover, fertility intention was significantly lower in women with children of both sexes as compared to women with children of only one sex. Additionally, in the logistic regression analysis, these two variables were significantly associated with the fertility intention. Results of one study in Nepal also suggest that people's interest in having children of both sexes is among the factors influencing future fertility intentions.[10] In addition, according to a study in Pakistan, the sex of surviving children is strongly correlated with subsequent fertility and contraceptive behavior.[27]

Moreover, logistic regression indicated that the history of child loss and previous childbirth experiences was not related to the fertility intention. In an experimental study in India, it was found that mortality of children reduced the interval between subsequent births considerably, but in the present study this factor had no effect on the fertility intention of women.[28] However, the present study did not examine the relationship between the last child's death and fertility intention, and examination of this relationship may yield different results.[29]

There was no significant association between the contraception method and fertility intention. This can be ascribed to the finding that in spite of the delayed pregnancy caused by some contraceptive methods, there is a chance of fertility in all cases except for the sterilized cases. As a result, there is no difference in the contraception types used by people with or without fertility intentions. On the contrary, results of one research in

Iran revealed that the withdrawal method, as a traditional method, was significantly used higher in people with fertility intentions than people lacking such an intention.[19]

Value of Children Associated with Fertility Intention

In this study, analysis of the collected data showed that among the child's value dimensions, the emotional dimension has the highest level of importance. Emotional costs also obtained the highest scores among all of the childbearing costs perceived dimensions. Similar to these results, in another research in Germany, the child's value emotional dimension had the highest score.[30] Based on the investigations in societies that are at higher economic levels, the socioeconomic dimension of child's value is less significant than the emotional dimension. This trend reduces fertility, because the child's value emotional dimension is satisfied with one or two children, but the economic costs of raising children in modern societies are increasing.[31] This finding indicates that as societies advance toward modernization and increased economic power, the emotional dimension of childbearing becomes more defined, and this result is in the same line with that of our study.

In the present study, childbearing benefits and its dimensions wereassociated with fertility intention. This result is in line with those of two studies done in Turkey and a study in several European countries which showed there was a significant relationship between childbearing benefits and actual fertility rate and fertility tendency.[30-32]

However, the findings obtained by two studies in Iran, and one study in the Indian rural societies did not comply with the findings of our study.[18,33]

Additionally, the score of perceived childbearing costs was associated with fertility intention. The findings of logistic regression also imply that with a decrease in the mean score of perceived childbearing costs, people's future fertility intention increases. Results of

a study in Turkey also showed a significant relationship between childbearing costs and fertility intention of the subjects.[34] Knowledge about values and costs of children can help policy makers modify the cost-benefit balance of having large and small families.

Study of fertility and factors influencing this trend was one of the strengths of this study due to the increasing importance of this problem in Iran and the lack of similar studies on Torbat Heydariyeh City. Nevertheless, there are limitations to the interpretation of the present study's findings, one of which is the cross-sectional design of this research. In addition, another limitation of this study was the difference in the respondents' understanding of the questions in the questionnaire.

CONCLUSION

Fertility intention was higher among housewives, those who had lower number of children, those who had children of both sexes, and those who considered more costs for childbearing. Thus, the ministry of health and population policy makers and planners make an attempt to balance these factors to increase fertility rate to a level higher than replacement one. On the other hand, since the share of the present research variables from prediction of fertility intention of female subjects was only 46%, based on the logistic regression analysis, it is recommended that other studies should be conducted to identify other factors influencing fertility intention of women at the fertility age in Torbat Heydariyeh City. Moreover, it is necessary to conduct further studies to find the relationship between the research variables and fertility intention of women in other parts of the country from different races and governing cultures. The ultimate objective is to use the results of these studies to step toward long-term goals of population growth in the country.

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