Gender Preference and its Influence on Fertility Intention in the low-Fertility Context of Tehran, Iran

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A R T I C L E I N F O	A B S T R A C T
Article type: Original article	***Background & aim:*** A number of studies have addressed the positive effects of parental gender preferences for children on fertility in Iran. However, new demographic situations have left two questions unanswered: whether parents demonstrate gender preferences for children in a modern low-fertility society and if so whether such a preference is a strong predictor of the probability of having another child.
Article History: Received: 04-Feb-2019 Accepted: 26-Jul-2019	***Methods:*** This cross-sectional survey was conducted on 450 married men and women residing in Tehran, Iran in 2014. The Data collection tool included a self-structured questionnaire entailing a demographic information form, fertility intention, and gender preference-related data. The data were analyzed in SPSS Software (version 24) using cross tabulation estimation and logistic regression.
Key words: Gender Preference Sex Composition Fertility Intention Tehran Iran	***Results:*** 22.2% of men and 17.11% of women were reported to be in favor of having daughter, while 12.9% of men and 14% of women preferred son. Moreover, gender preference was found to have no significant effect on fertility intention. However, the women with same-sex children were 3.17 times more likely to desire another child, compared to those who have different sex composition (OR=3.178, P value= 0.000). Furthermore, the men in the age groups of ≤30 and 31-40 desired to have another child, compared to older men. ***Conclusion:*** While a preference for son is rooted in Iranian culture, a new gender preference is emerging with a strong tendency toward having a girl. However, gender preference was not a driving force in the continuation of fertility in the context of low fertility of Tehran.

Introduction

Childbearing has been considered the leading role of women in Iran where most married women crave motherhood to satisfy their personal desires and live up to cultural and religious norms and social and economic values (1, 2). In such a cultural context, most men and women supported large families. However, the lifestyle of people has undergone dramatic changes in Iran during the past few decades. These changes are mirrored in the reduction of fertility rates, as well as a significant increase in the average age of marriage, and women's education. Iran has experienced a substantial decline in fertility over the past few decades. The total fertility rate decreased from 7.7 in 1966 to 2.1 in 2000 (3). As a result, Iran turned into a country with a low fertility rate within the three decades of 1980–2000. Consequently, the total fertility rate is currently below replacement level in 22 provinces of Iran (out of the 31), due to a sharp fertility decline (that began in the mid1980s) in the country (4).

However, owing to the emotional value of children, the two-child family is considered the ideal family in Iran. The majority of couples

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turn to the idea of two-child family due to the cost-benefit assessment of having children .In addition, the literature review revealed that in spite of rapid changes in fertility attitudes and behaviors, a consistent tendency seems to exist regarding some traditional elements of family, such as consanguinity marriage and baby gender preference (5, 6). These exceptions are indicative of the probability of higher intentions for fertility due to traditional values and gender preferences despite the current decrease in fertility rate.

Some of the earlier studies suggested a strong son preference among Iranian parents. For instance, the son preference was revealed in a recent study conducted by Froutan 2014 (7), on 743 married women aged 15-49 years in the urban area of Neka in Mazandaran. Moreover, childbearing intention was found to be closely associated with the desired gender composition of children. Another study by Razeghi Nasrabad and Mirzaii (8) demonstrated a significant association between gender preference and higher fertility in Hormozgan, and Kohgilooye and Booir Ahmad provinces. Given a strong son preference in Hormozgan province, parents are encouraged to have more children if the first child is a girl. Most women in the two mentioned provinces reported an actual number of children higher than the ideal one. This study mentioned some influential factors increasing fertility, such as consanguineous marriage, presence of more girls in the family, illiterate and primary education, and positive attitudes toward children benefits.

Mansurian and Khushnevis (9) studied the effect of women's gender preference for children on their fertility in Shiraz, Iran. The data used in this study were extracted from a survey performed on married women in 1999. The result of this study pinpointed a preference for a son in the study population. It is worthy to note that the number of children ever born in families with more sons was found to be lower, compared to families with more girls.

Gender preference has been considered one of the influential factors affecting high fertility in Iran. According to the literature review (9, 8, 5), gender preference can lead to profound demographic consequences, such as less time interval between births, greater completed family size, and unintended pregnancy. Consequently, the rate of abortion may be increased as a result of unintended pregnancy. This type of pregnancy adversely affects the quality of life in mothers and infants and leads to poor mental and physical health of mothers and newborns as well as maternal morbidity and mortality (10). Parental preference for children of a particular gender is suggestive of the welfare of Family members. Children born of their mother's preferred sex are revealed to be heavier with a higher body mass index and fewer diseases in early childhood (11).

As evidenced by the literature review, children's gender preference still remains a key determinant of fertility in many societies the world over (12, 7). However, new demographic situations in Iran have left two fundamental questions unanswered: whether changes in socio-demographic conditions decrease the effect of gender preference and sex composition on parents' fertility decisions. Are parents in favor of a specific gender for their children in a modern low-fertility society, such as Tehran (TFR 1.2 in 2011) and if so whether the gender preference and sex composition of previous children are a strong predictor of the probability of having another child. To the best of our knowledge, these questions have rarely been addressed with a limited number of empirical research conducted on the effect of parental gender preference for children on their fertility behavior; therefore, the purpose of the current study was to fill in this gap. Additionally, the results of the present study can be a great help to policymakers to take wise decisions concerning the current system of treatment and create effective interventions.

Accordingly, children's gender preference and its effects on fertility intentions is considered an important point at issue from the perspective of public health and family planning. Moreover, the study of this preferences may assist health care providers in the decision-making process regarding childbearing.

Materials and Methods

The data of this article was extracted from a cross-sectional survey performed in Tehran in 2014 (13) which was approved by the Research Council of the National Population Studies and Comprehensive Management Institute (approval number: 21147.4). There was no need to create a committee of ethics and get the ethics code since no test was performed on women. Moreover, it was accepted at the College's Academic Council. Furthermore, all the participants were informed about the purpose of the research before the commencement of the study, and the interview initiated upon the subject's agreement. The study population included married men and women in Tehran. Tehran's population was 8,153,974 in 2011(14) out of whom 4,262,047 people were married (2). The sample size was considered to be 450 based on sampling error at 95% confidence level, a sampling error of 0.05 based on Cochran's formula1 and adjustment factor of 0.25 for unresponsiveness. Sampling method was probability proportional to size. The data collection tool included a researcher-made questionnaire designed by the conduction of qualitative research (Grounded Theory) to identify influential factors and concepts affecting fertility intention. Based on the conceptual model developed in the qualitative section and the opinion of the faculty members, the basic framework of the questionnaire and the expressions were formulated. Data collection scales entailed a demographic information form, fertility intention, and gender preference information.

To obtain content validity, the questionnaire was revised by 6 faculty members of the National Population Studies & Comprehensive Management Iinstitute, Iran. The content validity was confirmed after making the required revisions with a content validity ratio of 0.74 and a content validity index of 0.86. In addition, face validity was approved by the faculty members. To determine the effectiveness of the questionnaire, a pretest was conducted on 50 participants to assess the strengths and weaknesses of the survey in terms of question model, wording, and order of the questionnaire. Additionally, exploratory factor analysis was applied to obtain construct validity and Cronbach's alpha was 0.878.

In this paper "intention for having more children" was the dependent variable which was measured by 1 and 0, which is equal to 1 if the participants intend to bear more children and 0 if they want no more children in the future. On the other hand, ender preference is the key independent variable.

The impact of gender preference on fertility has frequently been investigated through the analysis of the relevant data related to the ideal number of sons and daughters, as well as the sex composition.

Therefore, the key independent variables are gender preference (based on the number of daughters and sons) and the sex composition. Gender preference based on number was measured through two questions about the ideal number of sons and daughters measured by 0, 1, 2, 3, and 4+. Of these two questions, we computed a three-category variable. In this regard, if women reported more boys as an ideal number of children it was interpreted as a preference for boys. On the other hand, women who reported a higher number of girls were considered as preferring girls. If woman reported more boys than girls as an ideal number of children, the gender preference of boys would be considered, and conversely, women who reported a higher number of girls than boys were considered girls' gender preference Finally, those who reported equal numbers of boys and girls as their ideal number of children were identified without any preference. The sex composition was measured through two questions about the number of living daughters and sons which were measured by 0, 1, 2, 3, 4+, we computed two questions to the two-category variable. The women who reported all their living children either boys or girls were categorized as "same sex". Sex composition of children as "different sexes" is was related to the women about who reported at least one boy and one girl as the sex composition of their children.

In multivariable analysis, we control other factors associated with childbearing intention,

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$$^1 n = \frac{Nt^2 p(1-p)}{Nd^2 + t^2 p(1-p)}$$

such as age, level of education, upbringing neighborhood from birth to age 14, and employment status. Cross-tabulation of data about the desire for an additional child with gender preference was carried out to see if the gender preference influences future fertility intentions. In addition, the relationship between fertility intentions and socioeconomic variables was examined. Moreover, multivariate analysis was performed to control the effect of other variables and identify the net effect of gender preference on fertility intentions. In this regard, logistic regression model for the multivariate analysis was applied since the dependent variable was dichotomous and has two categories. The data were analyzed in SPSS Software (version 24). P-values less than 0.05 was considered statistically significant. The

results of the study were analyzed in terms of the odds ratio.

Results

Table 1 displays the distribution of participants by intention to bear more children and gender. The result indicated that approximately 45.8% of men and women intended to bear more children, while 54.2% of them did not. In addition, 45%, 30.2%, and 25 % of men and women reported having two and more children, a single child, and no child, respectively. The majority of these couples were in the first decades of marriage with the chance of childbearing for many years. High percentage of men and women with zero or one parity is due to the delay in the first or second birth. Therefore, a considerable number of participants intended to bear more children (Table 1).

Table 1. Distribution of respondents by intention to have more children in Tehran, Iran, 2014

Fertility intention	Women (n=225)	Men (n=225)	Total
Want no more children	56.4	52	54.2
Want more children	43.6	48	45.8

Table 2 depicts the percentage distribution of respondents according to gender preference. The results of this table revealed that while about 69% of women reported the same number of son and daughter as their ideal number of children sex, 31% has a gender preference. More respondents were reported to

favor a girl (17%), as compared to a son (14%). The variation in gender preference among men and women is clear. Moreover, men were reported to prefer girls and have stronger gender preferences, compared to women (Table 2).

Table 2. Percentage distribution of men and women by gender preference in Tehran, Iran 2014

Gender preference	Women (n=225)	Men (n=225)	Total
No preference	68.89	64.9	68.89
son preference	14	12.9	14
girl preference	17.11	22.2	17.11

Table 3. Percentage distribution of men and women with positive intention by gender preference and Children sex composition in Tehran

Variable	Want more children (positive intention)		
	Women	Men	Total
Gender preference			
No preference	42.7	49.3	45.8
Son preference	38.2	37.9	38.1
Girl preference	55.6	50	51.9
Children sex composition			
Same-sex	63.8	58.1	60.5
Mixed-sex	31.9	40.5	35.8

Percentage distribution of fertility intention by sex composition and gender preference is illustrated in Table 3. The data suggests that 50% of the men and women who favor girls intended to bear more children, while this value was reported as 38%, and 60% for men and women who preferred sons and children sex composition, respectively (Table 3).

Logistic regression for multivariate analyses was applied to examine the effects of gender preference on fertility intention. In order to determine the full effect of gender preference on fertility intention without any interaction with other variables, background characteristics of respondents were added to the model. The results are represented in Table 4.

The results indicated that gender preference has no noticeable impact on fertility intentions. However, sex composition was found to have a significant effect on women's fertility intention. Women who favor same-sex composition were revealed to be more likely to have more children than other women (OR=3.178, P value= 0.000).

Higher educational generally provides people with status or opportunities that reduce the importance of early childbearing. It might also delay parenthood due the long time they spend at college which in turn postpones childbearing. The relative rate of intention to have more children was lower among women with primary and secondary education levels, respectively (OR=0.132, P value= 0.024; OR=0.225, P value= 0.041). This is a logical consequence since women with higher education appear to postpone their fertility and they are currently seeking childbearing. This suggests that they have not satisfied their fertility, while women with lower education have already fulfilled their desired fertility and now report a lack of fertility intention.

Moreover, no significant difference was reported regarding the crave for more children between the women who were urban residents before age 14 and those who lived in rural area. Age group was found to be the main determinant of intention for more children among men. As for age group, the results were in the expected direction. In this respect, the men in the age groups of ≤ 30 and 31-40 were in favor of having more children, as compared to older men (Table 4).

Table 4. Determinants of intention for more children, Results of logistic regressions (reference category: Want no more children)

Variable	Women		Men	
	OR	Sig	OR	Sig
Gender preference (Ref: Girl preference)				
No preference	0.402	0.063	1.359	0.453
Son preference	0.254	0.121	0.814	0.733
Children sex composition (Ref: Mixed sex)				
Same sex	3.178	0.000	1.21	0.574
Place of birth(Ref: rural)				
urban	1.33	0.736	1.80	0.276
Education (Ref: university)				
Primary	0.132	0.024	0.154	0.250
Secondary	0.225	0.041	0.155	0.207
High school	0.777	0.520	0.976	0.990
Employment (Ref: unemployed)				
Employed	0.387	0.699	0.351	0.650
Age group (Ref: 41 and above)				
30 and low	33.42	0.000	4.80	0.000
31-40	14.41	0.000	4.16	0.000
−2 Log likelihood	196.210		232.535	

Discussion

The current study attempted to shed more light on the relationship between the sex composition of the living children and gender preference with parental intention to bear more children using the data from the cross-sectional survey in Tehran. The main research question was whether the fertility intention of men and women change if all their children are of a particular sex in modern low-fertility society, such as Tehran. On the same note, Rai et al. (14) believed that willingness to have other children significantly increased in families with only female children. Although son preference is predominant in developing countries especially South Asian countries and its effect is most visible when the fertility is on transition (15), the findings of the present study revealed that 22.2% of men and 17.11% of women favored daughter, as compared to 12.9% and 14% preference for son among men and women, respectively. While a preference for sons is rooted in Iranian culture and history (7), a new gender preference is emerging in favor of having girls in Tehran. A recent project conducted by Abbasi Shavazi et al. (16) suggested a decline in son preference, as opposed to daughter preference. This finding also applies to childless women who were pregnant or seeking pregnancy. The same result has been reported by Andersson et al. (17) which indicated that girl preference evolved in Denmark, Norway, and Sweden in the 1980s. However, this result is contrary to the findings of a study carried out by Saadati (18) that indicated women preferred a son without considering any independent variables. It is also contrary to the results of another study conducted by Pande and Astone in India (19), Westley and Choe's in Pakistan (20) that found son preference as being predominant.

The results of the current study revealed that 48% and 43.8% of men and women had the intention to have more children. Moreover, it was indicated that gender preference does not have a significant effect on fertility while son preference was predominant in Iran in the past and its effect on fertility was remarkable when fertility was at the transition stage. Some other studies, such as Rai et al. (15) found that the gender preference affects the fertility and

reproductive behavior of the participants and it is necessary to reduce son preference to improve the health and wellbeing of children and women.

However, the obtained results revealed that the same-sex composition of children increased the likelihood of parental intention to bear more children meaning that families with same-sex children are more likely to crave more children. Although the fertility behavior of Iranian women adapted to the drastic change for small family size norms especially two children, the majority of couples prefer at least one son and one girl due to different benefits of each gender. Childbearing is desired by most couples in Iran owing to several reasons, such as to fulfill their personal desires, help with household tasks, take care of younger siblings, and support parents at old age, as well as any other social or psychological benefits (2). This finding is consistent with the results of research conducted by Kazemipour (21). However, they were not in line with the results of other studies in other provinces. Hosseini and Baghi (22) have shown that parental preference in favor of boys increases their childbearing tendencies. Aghayari and et al. (23) in the analysis of 2000 demographic and health survey data using the parity progression ratio technique, showed that the chances of progressing from the current parity to the higher parity according to the gender composition of the children are different. In almost all parties, women with more girls were found to have a higher chance of experiencing later pregnancies, compared to women with more boys. Furthermore, the effects of gender preference and sex composition have been demonstrated by other studies. For instance, a study performed by Leone and et al. (24) revealed that the number of women who stopped childbearing in Nepal was higher among the women whose last child was a boy.

Given the impact of gender discrimination on women's health care, nutrition, education, and resource allocation (25), the results of the present study regarding the reduction of son preference and its consequent effects on fertility intention can be promising to improve

the health of women by reducing the number of pregnancies with every hope of having a boy.

Moreover, women with higher levels of education were more plausible to continue childbearing. In Iran, higher education is associated with higher delay in childbearing and increase in birth intervals (26, 27). Education can alter the timing and increase the age of childbearing in several ways. It might delay motherhood by increasing the number of years a woman spends educating and creation of incompatibility between the requirements of being a student and maternal obligations. An increase in women's education creates more occupational opportunities which in turn postpone fertility. Schooling is also positively related to changes in real and perceived costs and benefits of children, more favorable attitudes towards birth control, greater knowledge of contraceptive methods, and more female participation in the labor force [28-31]. These findings suggested that they have not fulfilled their fertility desires, while women with lower education have already satisfied their desired fertility and do not intend to have another child. Women's education, on the other hand, is one of the important factors influencing women's preferences. Accordingly, these tendencies get more intense with the decline in women's education, while women with higher education do not increase the number of their children merely to achieve a particular sexual composition (32).

Additionally, the age category plays an important role in the parental intention to have more children. As expected, women and men in younger age groups were more likely to desire more children, compared to those in the age group of 41 years and above. Since the majority of people over 40 years have already satisfied their fertility desires, they have no intention of having more children. Hosseini and Begi (22) also pointed to the influence of age on fertility intention. They indicated that younger men and women were more likely to desire more children than other people.

The result revealed that the childbearing intention in men in Tehran was only affected by age. Age was found to be an influential factor affecting the desire to have another child in a study performed by Razeghi Nasrabad and

Modiri (33) on the effects of men's gender preference for children on their fertility intention in Tehran. It has also been found that employed women and housewives were not different in terms of intention to have more children. Accordingly, employment status has no effect on the intention to have more children. The results of the current study supported the idea that sex composition gives couples a great impetus to continue their childbearing. Moreover, even in context with a prevailing preference for small family size, at least one son and daughter are generally favored.

Conclusion

The results of the present study revealed the pattern of a stronger preference for daughters over sons in Tehran. Additionally, the results of this study not only deepen our conception of the impact of sex composition and gender preference on fertility but also provides important information for policymakers whose goal is to increase fertility.

As evidenced by the results of the present study, most families consider it important to have at least one daughter and one son. In this respect, parental fertility intention will continue and the number of ideal children is two children even in Tehran; therefore, some supportive policies are needed to realize the ideal number of children desired by young couples. Furthermore, the cultural policies and encouraging and convincing programs should focus on the reinforcement of egalitarian gender attitudes and elimination of traditional attitudes toward gender preference throughout the country.

Conflicts of interest

The authors declare no conflicts of interest.

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