

## The Relationship between Spiritual Health and Fertility Preferences among Students of Selected Higher Education Centers, Mashhad, Iran

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### ABSTRACT

**Background & aim:** Considering the importance of keeping the country population young and fertility control, particularly, in the elites and with regard to the influence of spiritual well-being on fertility behaviour and childbearing in the religious cultural context of Iran, the present study aimed to determine the relationship between spiritual well-being and fertility preferences in the selected higher education centers of Mashhad, Iran in 2019.

**Methods:** This correlational study was carried out on 296 married students of Mashhad University of Medical Sciences and Razavi University of Medical Sciences in Mashhad, Iran, who were selected using multistage sampling between 2018 and 2019. The data were collected using three questionnaires of individual-educational characteristics, spiritual health, and Miller's Fertility Preferences and Childbearing Questionnaire. The data were analyzed using descriptive statistics and Pearson's correlation coefficient.

**Results:** In terms of spiritual health, 222 (75.0%) students had a moderately score. Also, 143 (48.3%) subjects had a high level of willingness to have children. Regarding the number of children, 88 (29.7%) students tended to have two children, and 75 (25.9%) participants were inclined to have children within 1 to 2 years after marriage. There was a significant linear relationship between the spiritual health and fertility preferences of the students ( $r=0.29$ ;  $P<0.001$ ).

**Conclusion:** It is recommended to develop a codified and local curriculum for the education of spiritual health, and its impact on the fertility preferences of the students. However, further studies in this regard are suggested.

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### Introduction

Childbearing is a social and biological necessity. Human society seeks to maintain its religions, nationalities, values, and traditions and preserves its cultural and genetic heritage by subsequent generations through their offspring. Therefore, the peak of children's value is in the survival and continuation of humanity; and declining offspring will cause shakiness, disruption, and destruction of generation. Iranian society is also no exception in this regard (1).

Theoretically, when a population can be authoritative and dynamic that includes several characteristics, such as young age structure, appropriate and dynamic fertility, and skilled human resources (2). On the other hand, population is considered one of the most important and influential components of national security. As the young population of a country grows, the national security index and its global authority also increase (3). When up to more than 35% of a country's population are

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within the age range of 20-65 years, it will have the best and most favorable geopolitical factors to maintain security, political stability, and economic development (4).

Population and its variations are the endorsement of national power among societies. The national power is the most effective means of providing national security in a country (5). Results of studies carried out by Asadzadeh (2015) and Mahmoudi (2014) showed that population growth and birth rate have significant positive effects on welfare and gross domestic product. Population growth leads to an increase in creative workforce, further development, and economic growth rate (6, 7). Fertility rate is one of the main factors in population growth among countries (1).

Fertility has dramatically declined in Iran over the past three decades that makes it one of the countries with a substitutional fertility level or below (8). Findings of studies conducted by Schwazy (2005) and McDonald (2006) revealed that fertility in Iran has decreased across all geographical regions and age groups at the same time (8). According to available statistics, the total fertility rate in Iran has reached from approximately 7.7 children per woman in 1345 to 1.8 in 1395 and 1.6 in 1390 to 1.9 in 1395 (9). Given the low fertility rate, the United Nations predicted one of the three patterns, including negative population growth (-0.23), moderate downward (0.35) or positive growth (about 0.89), for Iran in 1430 (10).

Continuing decline in birth and transition from natural fertility to controlled fertility is gradually pushing the age structure of the population toward aging (11). As the trend continues in the next few years, the population faces an era characterized by low fertility rate, declining population growth, increasing dependency phenomenon, increasing age and decreasing population dynamics and growth, as well as reducing the country's defense and economic potential. These features will cost a great deal for every country (12). The modification depends on the couple's fertility aspirations and intentions to bear children in the future (13).

There are numerous studies showing that fertility behavior is influenced by fertility intention, and fertility intention is in turn

affected by fertility inspirations (14-15). In practice, fertility is influenced by several factors, such as social values, cultures, and norms, in addition to individual choices (16-17). Religion is one of the influential cultural factors in the tendency for childbearing (18). In previous studies, religious beliefs have been effective in forming fertility intentions (19).

According to all religions, there is an encouragement to increase fertility. Religion and religious beliefs as cultural factors can influence fertility through the norms related to family size, number of children, and age of marriage (20). On the one hand, there is a direct relationship between couple satisfaction and fertility behavior (21). There is a positive significant relationship between adherence to religious issues and spiritual well-being with life satisfaction (22). Results of a study carried out by Arghavani et al. (2014) showed that more religious couples had higher levels of fertility preferences or intentions (23). Schwazy (2004) in his study conducted in four provinces showed that religion is one of the factors affecting fertility in each region, and fertility among Sunni women was higher than Shiite ones (19).

Although spiritual health is a universal concept (24), and studies have been conducted on religion and its effects on various aspects of life, among which the impact of spiritual health on fertility has received less attention. To the best of our knowledge, there has been also no published article on the relationship between spiritual health and fertility intentions. Studies have merely examined religious views or attitudes toward fertility that may be different from the practice of religious and religious instructions; therefore, it is necessary to examine religious practice in order to obtain an accurate estimation and a mediating variable.

There are several reasons to perform the present study, including the decline in fertility rates in the last three decades in Iran (1), necessity of couples' intention awareness to predict future fertility trends, strong recommendation of the country's senior leadership and macroeconomic policy regarding increasing childbearing among young generation, especially the educated people, as well as lack of information on spiritual health

and practice of religious beliefs and its relation to fertility.

On the other hand, considering that Supreme Leader of the Revolution said that "one of our problems is that the most prominent couples who are of the elites have the minimum number of children, and this is a big loss because the country has been deprived of superior human genes" (25). Therefore, the present study was conducted on the relationship between spiritual health and fertility preferences in selected educational centers (among educated people), who are not only influential in their own community but also as the driving forces and leaders of the cultural and social front. On the other hand, their offspring, who are educated and have relatively higher IQ, could be good support for achieving the scientific goals of Islamic society and making the country independent of foreign countries.

## Materials and Methods

This correlational study was performed on 296 married students of Mashhad Faculty of Medical Sciences and Razavi University of Medical Sciences in Mashhad, Iran, during 2018-2019. The students were randomly selected through stratified (i.e., gender-based) and cluster-based (i.e., college-based) samplings. Undergraduate students under 40 years of age, Shiite, with no known infertility disorder or withholding fertility for any reason, and no psychiatric disorder confirmed by the psychiatrist were included in the present study. If the subjects did not answer 95% of the questions or did not wish to continue, they were excluded from the study.

The minimum sample size for a pilot study was calculated 30 students. Using the formula of correlation between two quantitative variables in a community with 95% confidence interval and power of 80% the sample size was obtained at 249 subjects. Considering the dropout, 20% was added to the sample size. Therefore, 305 subjects were included in the study, out of whom 9 students were excluded due to incomplete forms, and the final analysis was performed on 296 students.

The study tools included a demographic-educational characteristics questionnaire, spiritual health questionnaire, and Miller's Fertility Preferences and Childbearing

Questionnaires. Demographic information questionnaire included 13 completed and multiple-choice items regarding age, gender, educational level, university and college of education, income, insurance status, spouse's educational status, spouse's occupation, duration of marriage, childbearing, as well as number of children and their gender.

A comprehensive questionnaire of spiritual health assessment was developed by Amiri et al. (2014) among the students of Tehran universities in Tehran, Iran. The questionnaire consisted of 48 items designed in two constructs of vision, as well as attitude and behavior. Furthermore, in each construct, four subconcepts were explained, including communication with God, self, others, and surroundings. Each item was scored from 1 (i.e., strongly agree) to 5 (i.e., strongly disagree). The higher score indicated a higher level of spiritual health. The total score was 48 as total spiritual well-being (26).

Miller's Fertility Preferences and Childbearing Questionnaire included the items considering the age at first marriage, number of children, appropriate age interval between children, desire to have or not to have a child in future, number of ideal children at the time of marriage, number of ideal children at the time of study, and gender preference. Validity of all three instruments was confirmed using the content validity method by 10 faculty members of Nursing and Midwifery Departments at Mashhad School of Nursing and Midwifery. Internal consistency analysis of spiritual health questionnaire constructs in a study by Amiri et al. (2015) showed that all the scales and subscales of questionnaire had a minimum standard of reliability (0.8), and Cronbach's alpha coefficients were calculated and confirmed the internal consistency of all constructs.

Findings of spiritual health questionnaire were favorably corroborated in both initial and main studies (26). In the present study, Cronbach's alpha index (with the participation of 30 volunteer students in one session) was calculated to ensure its reliability through internal consistency. In the present study, in order to ensure the reliability of the questionnaire by internal coordination, the

Cronbach's alpha index (with the participation of 30 volunteer students at one time), Pearson correlation coefficient, and multiple correlation coefficient were evaluated, and its reliability was confirmed with alpha equal to 0.84. Reliability of the test (i.e., test-retest) was used to determine the reliability of Fertility Preference Questionnaire in a Study by Arghavani (2013). Correlation coefficient of the questionnaire was calculated from 0.94 to 0.98 for different items (27). In this study, Cronbach's alpha coefficient and test-retest reliability, such as the spiritual health questionnaire, were used to assure the reliability of this tool. Reliability of the tool was confirmed at alpha and correlation coefficient equal to 0.79 and 0.74, respectively.

Following the approval of the study and obtaining from the Regional Committee on Medical Ethics (2000.015 IR.MUMS.NURSE), an official letter from the School of Nursing and Midwifery of Mashhad University of Medical Sciences was presented to the authorities of the selected educational centers. Eligible students of Mashhad selected educational centers were chosen through stratified (i.e., gender-based) and cluster (i.e., college-based) samplings. The researcher firstly referred to the faculties of the University of Medical Sciences and Razavi University of Medical Sciences and obtained their student list based on gender and faculty.

Then, within these centers, the students of both genders were randomly selected to fit the population. Therefore, a table based on the number of individuals in each cluster was prepared in coordination with the relevant education departments, and 30% of the clusters (i.e., faculties of Razavi University of Medical Sciences and faculties of Medical Sciences) were selected in this study. In the selected clusters, based on the number of individuals in each cluster and sample size, the quota for each cluster was determined, and according to the irregular list of relevant students, the number of selected students was proportional based on the random number table.

Contact number and class schedule of the selected individuals from the educational departments were also obtained by the researcher, and the attendance at school or field by texting and posting announcements on the

cultural board were coordinated by the researcher. The researcher attended each selected center for 2-3 days, and each student attended at one of these days depending on their schedule. The subjects were required to complete a questionnaire according to the facilities of their respective units, classrooms or halls.

During the students' attendance, the researcher firstly explained the research objectives and what the research units should do in a 10- to 15-minute talk and also answered their questions. The individuals who were willing to participate in the study completed the informed consent form. Then, the subjects were provided with the inclusion criteria form to complete. If they met all the criteria, the demographic and educational characteristics questionnaire, spiritual health assessment questionnaire, and Miller's Fertility Preferences and Childbearing Questionnaires were provided for the research units to complete.

The researcher was present all the time to resolve any questions or problems. The approximate time required to complete all the questionnaires was around 30 min. Given the first description of the session, it took around 45 min to 1 h. If the student was unable to answer all the questions during this time, he/she would be given extra time to complete the questionnaires again. An interval was considered in order to rest and prevent fatigue.

All codes of ethics associated with medical science studies, including informed consent, confidentiality of information, and possibility to withdraw from study if they did not tend to continue, were observed in the present study.

After data collection and coding, the data were analyzed using SPSS software (version 16).

Descriptive statistics, including frequency distribution, mean, and standard deviation, were used to express the characteristics of the study sample, and the Pearson correlation coefficient was utilized to analyze the relationship between spiritual health and fertility preferences. In addition, 95% confidence interval and P-value equal to 0.05 were considered statistically significant.

**Table 1.** Frequently distribution of studied university students according to school profiles

Variable	Frequency (%)
University	209 (70.6)
Razavi Islamic Sciences	87 (29.4)
<b>Medical Sciences</b>	
Nursing and Midwifery	58 (27.8)
Medical	78 (37.3)
Dentistry	17 (8.1)
Pharmacology	25 (12.0)
Paramedical	24 (11.5)
Health	7 (3.4)
<b>Islamic Sciences</b>	
Shahid Motahari	28 (32.2)
Razavi	59 (68.7)
<b>Income</b>	
Less than sufficient	92 (31.1)
Sufficient	192 (64.9)
More than sufficient	12 (4.1)
<b>Insurance status</b>	
Had	192 (64.9)
Did not have	104 (39.1)
<b>Partner educational degree</b>	
High school	19 (6.4)
Diploma	49 (16.6)
Associate's/Bachelor's degree	141 (47.6)
Master's degree	44 (14.9)
Doctorate	43 (14.5)
<b>Partner occupation</b>	
University student	58 (19.6)
Employee	90 (30.4)
Self-employed	65 (22.0)
Housewife	75 (25.3)
Other cases	8 (2.7)
<b>Duration of marriage (year)</b>	
Less than 5	175 (59.1)
5-9.9	71 (24.0)
10-14.9	34 (11.5)
15-20	16 (5.4)
<b>Having a child</b>	
Yes	138 (46.6)
No	158 (53.4)
<b>Number of children</b>	
One	87 (63.0)
Two	41 (29.7)
Three	10 (7.3)
<b>Children gender</b>	
Daughter	56 (18.9)
Son	56 (18.9)
Daughter and son	26 (8.8)

## Results

Mean age of the students was reported as 27.6±5.6 years (age range: 18-39 years). Moreover, 56.8% (n=188) of the participants were within the age range of 20-29 years. In terms of gender, 57.1% (n=169) of the subjects were women. Furthermore, 32.1% (n=95), 29.7% (n=88), and 38.2% (n=113) of the subjects were undergraduates, postgraduate students (MSc), and postgraduate students (PhD), respectively. Other demographic characteristics of the research units are listed in Table 1.

Mean score of students' spiritual well-being was 211.0±19.1, and the mean score of insight and spiritual health was 127.0±11.9. Moreover, the mean score of spiritual health performance was 84.0±9.8. Spiritual health score and its dimensions were divided into three categories, including good, medium, and low (good: more than one standard deviation above average, medium: between one standard deviation below average and one standard deviation above average, and low: less than one standard deviation). The obtained results showed that 206 (69.6%), 209 (70.6%), and 222 (75.0%) students in insight dimension, performance dimension, and overall spiritual health score had a moderate level of spiritual health (Table 2; P, <0.05).

**Table 2.** Frequently distribution of students in selected educational centers of Mashhad, Iran, according to total spiritual health levels and their dimensions

Dimensions	Level	N (%)
Insight and attraction	More	38 (12.8)
	Middle	206 (69.6)
	Less	52 (17.6)
Function	More	47 (15.9)
	Middle	209 (70.6)
	Less	40 (13.5)
Total	More	34 (11.5)
	Middle	222 (75.0)
	Less	40 (11.5)
Total		296 (100.0)

Miller's fertility preferences in this study included the tendency to have a child, gender of the child, and desired interval between births (14). Mean score of childbearing students was reported as 6.6%. In addition, 143 (48.3%)

students had a high level of desire for having children. Regarding the number of children, 88 (29.7%) students tended to have two children. Moreover, 126 (42.6%) subjects had a tendency to have two daughters, and 120 (40.5%) participants had a tendency to have a son. Mean numbers of favored children, daughters, and sons were  $3.3 \pm 1.5$ ,  $1.6 \pm 1.0$ , and  $1.7 \pm 1.0$ , respectively. In terms of the duration of childbearing, 75 (25.9%) students who tended to have children showed a tendency to have children within 1 to 2 years after marriage. Mean duration of childbearing for these students was  $3.1 \pm 2.1$  years after marriage. It should be noted that 6 subjects stated that they did not want to have children.

According to Pearson's correlation coefficient, there was a significant direct linear relationship between the spiritual health score and fertility preferences of the students in selected educational centers of Mashhad ( $r=0.29$ ;  $P<0.001$ ). In addition, according to Pearson's correlation coefficient results, there was a significant direct linear relationship between the scores of insight ( $r=0.31$ ;  $P<0.001$ ) and performance dimensions ( $r=0.19$ ;  $P=0.001$ ) of spiritual health with fertility preferences (all three mentioned dimensions).

Results of multiple correlation coefficient showed that in addition to the spiritual health score ( $t=3.9$ ;  $P<0.001$ ), only gender variables ( $t=2.1$ ;  $P=0.032$ ) correlated with the dependent variable of spiritual health ( $t=3.9$ ;  $P<0.001$ ). Students' educational level ( $t=2.4$ ;  $P=0.019$ ) had a direct significant correlation with fertility preferences ( $r=0.51$ ;  $P<0.001$ ).

## Discussion

Concerning spiritual health, the results of the present study showed that the average score of spiritual health in the majority of students was moderate. In this regard, the findings of a study by Rahimi et al. (2013) with the aim of determining the spiritual health of nursing and midwifery students of Kerman University of Medical Sciences in Kerman, Iran, revealed the average level of spiritual health among the nursing and midwifery students (28). This result is consistent with the findings of the present study. One of the possible reasons for the congruence can be considered the research community.

The subjects in the present study were selected from the different faculties of University of Medical Sciences and Razavi University of Sciences. The undergraduate curriculum in nursing and midwifery in Iran, addressing spiritual health, as an essential component of holistic nursing care, and most nursing models emphasize the concept of spirituality; however, the level of spiritual health of the students was moderate. The American Nursing Association also believes that nurses should provide spiritual care for their patients; therefore, they should be educated in the field of spiritual health (29).

Concerning fertility preferences, the results of the present study showed that half of the students tended to have children, and the tendency to have a daughter was slightly higher than that of a son. Most participants also tended to have children 1 to 2 years after marriage. Findings of a study carried out by Slamloo et al. (2013) with the aim of determining couples' attitudes toward fertility following marriage encouragement policies in the country showed that the number of ideal and preferred children among most couples was less than two. In addition, there was no difference between the genders of preferred offspring. For those whose child gender was important, having a son was a higher priority for both men and women (30).

Results of the above-mentioned study are inconsistent with the results of the present study. Possible causes of inconsistency can be different samples and their characteristics. Because in a study conducted by Islamloo, the research units were selected from the general population; however, in the present study they were academic. Furthermore, the educational level of about 60% of the subjects in a study by Islamloo was diploma and lower that could affect the results.

Regarding the relationship between spiritual health and fertility preferences, the results of the present study showed that with increasing spiritual health and its dimensions (i.e., insight, attitude, and performance), fertility preferences (in all three dimensions) also increase. Result of a study carried out by Khadiozadeh et al. (2014) determining the relationship between childbirth motivation and fertility preferences in couples showed that there is a direct relationship

between positive fertility motivations in couples with desire for childbearing and ideal number of children (27). This finding is in agreement with the results of the present study.

In this regard, the reasons for the congruence can be observed in the cultural and religious context of Iran because religious teachings are closely and directly related to spiritual health. As indicated by Arghavani (2014), as the frequency of religious couples increases, the preferences or intentions increase and the fertility rate is higher (23). This is also associated with the beliefs of Iranian society, because family formation is closely linked to childbearing, and childbearing is often one of the main motives for marriage. The common expectation of couples in Iranian societies is to have their first child shortly after marriage (31). Results of a study performed by Hajizadeh et al. (2016) with the aim of determining religious attitudes and fertility behaviors in women referred to the health centers of Shahid Beheshti University of Medical Sciences in Tehran, Iran, also showed that there is a significant relationship between religious beliefs and fertility behaviors (32), which is similar to results of the present study. Because spirituality and its consequences are the powerful resources in a person's life to provide the ability to adapt to individual needs and changes (33) and fertility is a new phase of couples' lives that requires preparation and adaptation good spiritual health can be helpful in this regard.

One of the limitations of the present study was the physical and mental conditions of the students that could affect their answers while completing the questionnaires. The researcher tried to provide relaxed conditions for answering the questionnaires in order to eliminate the effect of this variable (using the classroom and auditorium), and if the research unit was unprepared, it was postponed to another time. Critical studies should be separately conducted considering the defined dimensions of fertility preferences in this study.

## Conclusion

The results of this study showed that the enhancement of the spiritual health level will influence positively the increase of marriage and fertility preferences of students. Therefore, it is necessary that the Higher Council for

Cultural Revolution and curriculum designers of universities provide an appropriate context for improving the spiritual health of students using proper content, educational environment, and effective strategies.

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## Conflicts of interest

Authors declared no conflicts of interest.

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