

**Research Article**

Religiosity and attitudes toward childbearing among Iranian college students: A cross-sectional study

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Article Info.**Received:** 29 Sep 2024**Revised:** 25 Nov 2024**Accepted:** 8 Feb 2025*** Corresponding Author:**

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Cite this article:

Yadollahpour MH, Bakouei F, Khafri S, Hosseini R, Nikzad A, Naghipour F. Religiosity and attitudes toward childbearing among Iranian college students: A cross-sectional study. *Curr Res Med Sci*. 2025; 8: 55-63.

Abstract

Background: Given Iran's fertility rate falling below the replacement level and the efforts of policymakers to address this issue, it is crucial to investigate this research gap. This study aims to explore the relationship between religiosity and the attitude towards childbearing among students in medical colleges.

Methods: This cross-sectional study was done in 2021 among 144 medical students from a medical college using convenience sampling. Attitude towards childbearing and religious orientation were assessed using questionnaires. The data were input into SPSS-22 software and analyzed using ANOVA, T-test, Chi-square statistical tests and multiple linear regression. A significance level of $p < 0.05$ was applied to all tests.

Results: Participants had a mean age of 24.69 ± 2.43 years, and the majority (79.9%) exhibited a positive attitude towards childbearing, particularly in the physical-identity subscale. Results from multiple linear regression analysis predicting childbearing revealed that only religious orientation ($B=0.257$, $P<0.001$) was a significant predictor. As religious orientation strengthens, the attitude towards childbearing also becomes more positive.

Conclusion: The findings of the present study reveal a direct relationship between religious orientation and college students' attitudes towards childbearing. A stronger sense of religiosity corresponds to a more positive attitude towards childbearing.

Keywords: Religious orientation, Childbearing, Attitude, Medical college students.



Introduction

The consistent decline in the total fertility rate (TFR) below replacement levels, a crucial determinant of population growth rate, is a global concern affecting several countries, including Iran (1). Iran has experienced a sharp decline in the fertility rates, and the total fertility rate (TFR) has decreased from 6.3 to 1.62 over the past three decades. Iran's population growth rate is estimated to reach 1% by 2025 and then drop below 1% by 2031 (2).

Reduced motivation to have children is correlated with diminished prospects for economic growth, an aging population, reduced levels of happiness, social vulnerabilities, disruption of socialization and communication among children in low-population families, increased healthcare costs for the elderly and potential mental and psychological challenges for future generations (3).

Despite the desire for two children in certain provinces of Iran, most Iranian women still value having more than two children. The fertility rate falling below two children indicates a disconnection between the desired and actual fertility among Iranian couples (2). Attitudes and tendencies toward childbearing and fertility are influenced by various factors, such as women's employment, economic and social independence, economic conditions, the absence of government welfare facilities, misconceptions, higher education and increased involvement of women in economic, social, and cultural aspects of society (4). Other influencing factors include the age of women at marriage, the number of children, the age of the spouse, the age at the first pregnancy, the gender of the first child, self-support (physical, social, and psychological), communication technologies, awareness of pregnancy prevention methods (5), and the use of cell phones and their derivatives, as well as individualism (6). Furthermore, the growth of

individualism and emancipation from traditional influences, including religious beliefs, has played a significant role in the remarkably low fertility levels (7).

Religion constitutes a set of beliefs and guidelines shaping the essence of life (8). Generally, individuals who adhere to religious beliefs tend to have larger families. However, the positive association between religion and fertility behavior, as indicated by various indicators, exhibits considerable variation across different geographical locations. It is noteworthy that this relationship may not universally apply on a global scale. Religiosity may interact with other social factors influencing fertility, such as education, employment or cultural influences (9).

At the macro level, a complex relationship exists between religiosity and fertility, as evidenced by the experience of several European countries, including Italy, Poland, Romania, and Greece, where high levels of religiosity coincide with historically low birth rates. However, it is noteworthy that at the micro level, religiosity may exhibit a positive relationship with fertility, as indicated by recent literature (10).

Given Iran's fertility rate falling below the replacement level and the efforts of policymakers to address this issue, it is crucial to investigate this research gap (4). The meta-analysis conducted on studies related to low fertility in Iran reveals a predominant reliance on theories of structural explanation, emphasizing the impact of economic and social factors such as income, education and social status. Despite the majority of studies focusing on the role of cultural factors in fertility behaviors, the relationship between fertility and religiosity, as a cultural factor, remains underexplored (11).

College students form a substantial segment of Iran's population, and their age and social status as an educated class position them as role models within society. It is crucial to investigate the current scenario by examining students' attitudes

towards childbearing and their connection with religious beliefs. This study aims to explore the relationship between religiosity and the attitude

Methods

This cross-sectional study surveyed to fulfill its main objective by surveying 144 medical students (including those in internships and specialized courses) at Babol University of Medical Sciences in 2021. The sample size was determined 144 people based on similar study (12) with $p=0.35$, error of 10%, $\alpha=0.05$, power of 80% and 15% dropout rate using the following formula:

$$n \geq \left(\frac{Z_{1-\alpha} + Z_{1-\beta}}{\frac{1}{2} \ln \frac{1+r}{1-r}} \right)^2 + 3 = 144$$

This study received approval from the Ethics Committee of Babol University of Medical Sciences under the code IR.MUBABOL.HRI.REC.1397.198. Participants were recruited using convenience sampling based on the inclusion criteria. The inclusion criteria consist of all medical students at the internship or specialized level of Babol University of Medical Sciences. These students must be Iranian, Muslim, willing to take part in the study and not completing the questionnaire as the exclusion criteria of the study.

After explaining the study's objectives and providing instructions on questionnaire completion, the students were asked to answer the questionnaire. They were assured that individual opinions would remain confidential and undisclosed. Participants provided written informed consent. To instill confidence, the questionnaires were presented to students in an online format at the following address: <https://survey.porsline.ir/s/nH4IIXR/>. Notably, incomplete questionnaires were excluded from the final dataset.

towards childbearing among students in medical colleges (in specialized courses and medical internships).

Measurements

The data was collected through three questionnaires: demographic information, attitude towards childbearing and religious orientation. The demographic information questionnaire by reviewing of literature, aligned with the study's objectives includes age, sex, educational grade, marital status and ideal number of children.

Attitude towards Childbearing Questionnaire

The questionnaire assessing attitudes toward childbearing comprised 64 items, categorized into four subscales: cultural-social (17 questions), economic (10 questions), belief (11 questions) and physical-identity (26 questions). Responses were recorded on a 5-point Likert scale, ranging from 'completely agree' to 'completely disagree,' with some items scored inversely. The total score range was 64 to 320. The average score for the entire questionnaire was set at 180, where scores above this indicated a positive attitude and scores below reflected a negative attitude toward childbearing. Additionally, average scores for the subscales—physical-identity, cultural-social, economic, and belief—were established at 73, 47, 28, and 30, respectively. The questionnaire demonstrated high reliability, with a Cronbach's alpha coefficient of 86% (13).

Religious Orientation Questionnaire

This questionnaire comprised 68 questions, with 42 focusing on beliefs and 26 on ethics. Responses were recorded on a 4-point Likert scale, ranging from 'completely agree' to 'completely disagree,' with some items scored

inversely. The total score ranged from 68 to 272, but for simplicity, the score was normalized out of 100. A higher score, closer to 100, indicated a stronger religious orientation. The questionnaire exhibited high reliability, as evidenced by a Cronbach's alpha coefficient of 91% (14).

Statistical Analysis

The data were input into SPSS-22 software and analyzed using ANOVA, T-test, Chi-square statistical tests and multiple linear regression. A

significance level of $p < 0.05$ was applied to all tests.

Results

The study was conducted on 144 selected college students. The mean age of participants was 24.69 \pm 2.43 years. Majority of these were women (65.5%), internship (87.5%) and single (71.1%). In terms of the ideal number of children, 49 students (42.2%) stated more than 2 children as ideal (Table 1).

Table 1. Participants characteristics

Sex	
Male	49 (34.5)
Female	93 (65.5)
Grade	
Specialized courses	17 (12.5)
Medical Internships	119 (87.5)
Marital status	
Single	101 (71.1)
Married	41 (28.9)
Ideal child number	
0	12 (10.4)
1	10 (8.6)
2	45 (38.8)
2 or more	49 (42.2)
Age (Year)	
Mean (Standard deviation)	24.2 (2.43)

Most of the college students (79.9%) had positive attitude towards childbearing and this positive attitude was more in subscale of physical-identity than other subscales (Table 2).

Table 2. Participants' attitude to childbearing and subscales

Variables	Number (Percent)
Childbearing (Total)	
Positive	115 (79.9)
Negative	29 (20.1)
Physical/ Identity	
Positive	125 (86.8)
Negative	19 (13.2)
Social-Culture	
Positive	121 (84)
Negative	23 (16)
Economy	
Positive	93 (64.6)
Negative	51 (35.4)
Belief	
Positive	79 (54.9)
Negative	65 (45.1)
Total	144 (100)

The attitude towards childbearing and religious orientation based on participant characteristics, the results showed that the score of the belief subscale in male, married students and the desire to have more than two children, as well as the score of the economic subscale in single students and the desire to have zero children was significantly higher. Religious orientation is also stronger in married students and the desire to have more than two children (Table 3).

Table 3. Attitude to childbearing and religious orientation based on Participants' characteristics

Variable	Religious Orientation Mean (SD)				Attitude to childbearing Mean (SD)			
	Beliefs	Ethics	Total	Physical- identity	Belief	Economy	Social- culture	Total
Sex								
Male	64.38 (20.82)	65.43 (13.74)	64.78 (17.63)	79.18 (7.52)	35.37 (10.90)	28.12 (6.57)	51.65	194.33
Female	60.76 (19.37)	65.15 (11.53)	62.44 (15.71)	80.40 (7.50)	29.11 (10.50)	29.88 (5.94)	(5.70)	(17.79)
P Value	0.305	0.901	0.420	0.361	0.001	0.108	52.56	191.95
							(5.31)	(17.48)
							0.348)
							0.445	
Grade								
Specialized courses	66.38 (17.40)	69.45 (13.18)	67.56 (15.31)	80.59 (5.66)	35.12 (8.60)	27.35 (5.36)	53.35	196.41
Medical Internships	61.57 (20.20)	64.88 (12.23)	62.84 (16.55)	80.11 (7.46)	30.76 (11.18)	29.45 (6.33)	(5.08)	(11.66)
P Value	0.353	0.156	0.270	0.800	0.126	0.195	52.20)
							(5.38)	192.53
							0.408	(17.74)
							0.384)
Marital status								
Single	58.49 (19.29)	63.04 (11.59)	60.23 (15.62)	80.62 (6.18)	28.59 (10.30)	30.59 (5.47)	52.0 (5.24)	191.81
Married	71.73 (17.05)	71.01 (12.07)	71.46 (14.79)	79.24 (9.11)	38.12 (9.57)	26.10 (6.48)	53.29	(16.76)
P Value	≤0.001	≤0.001	≤0.001	0.377	≤0.001	≤0.001	(5.47)	196.76
							0.191	(17.56)
							0.119)
Ideal child number								
0	41.66 (20.39)	55.44 (9.26)	46.93 (15.43)	80.33 (4.82)	19.17 (6.26)	36.08 (6.05)	48.50	184.08
1	55.31 (20.21)	62.43 (11.62)	58.03 (16.62)	82.70 (5.75)	27.60 (9.75)	31.60 (4.94)	(4.03)	(11.93)
2	60.56 (19.10)	64.61 (12.37)	62.11 (15.89)	80.18 (10.0)	28.58 (9.01)	30.11 (5.41)	55.0 (4.21))
2 or more	69.32 (18.23)	68.91 (11.54)	63.016 (14.98)	79.67 (6.59)	38.57 (10.31)	26.31 (6.45)	52.27	196.90
P Value	≤0.001	0.004	≤0.001	0.750	≤0.001	≤0.001	(6.69)	(12.56)
							52.63)
							(5.02)	191.13
							0.051	(21.58)
							0.106)
Total score	100	100	100	130	55	50	85	320

The results of multiple linear regression analysis to predict childbearing by religious orientation and demographic characteristics showed that only the variable of religious orientation ($B=0.257$, $P<0.001$) is significant. With the increase in religious orientation, the variable of attitude towards childbearing also

increases significantly. The model able to predict 24.2% of the variance of the dependent variable (Table 4).

Table 4. the results of multiple linear regression analysis to predict childbearing

Predictors	Unadjusted			Adjusted			P-value	
	Unstandardized Coefficients		Standardized Coefficients	P-value	Unstandardized Coefficients			
	B	Std. Error	Beta		B	Std. Error	Beta	
Religious Orientation	0.012	0.02	0.499	<0.001	0.257	0.05	0.493	<0.001
Sex	0.125	0.071	0.147	0.08	0.983	3.237	0.027	0.762
Grade	0.16	0.103	0.124	0.124	5.118	5.273	0.089	0.334
Marital status	-0.14	0.073	-0.16	0.058	5.320	3.828	0.139	0.68
Ideal child number	0.039	0.04	0.092	0.327	0.861	1.215	0.067	0.48

Discussion

The findings of the present study indicate that college students with a stronger religious orientation exhibit a more positive attitude towards childbearing. This association persists even after adjusting for variables such as gender, educational level, marital status and the ideal number of children in the analytical model. Individuals with a robust religious orientation tend to harbor hope based on their understanding of the world's creator, demonstrate patience and persistence in pursuing lofty goals, uphold respect for their parents, adhere to parental guidance in their behavior, display a heightened sense of responsibility, perceive themselves as empowered and maintain a more favorable attitude towards having children. Our study contributes empirical evidence to the understanding of the relationship between religion and the intention to bear children. It is noteworthy that this relationship may vary across countries with differing levels of traditional practices (9). The nexus between religion and childbearing can be elucidated by the fact that, while not all religions provide direct laws and teachings on reproductive behaviors such as abortion and contraception, they do impart general teachings regarding attitudes and beliefs about family and

childbearing. These teachings can exert an indirect influence on reproductive behaviors (15).

According to our findings, married students, particularly those desiring more than two children, exhibited stronger religious orientations. In contrast, another study concluded that religion is correlated with parenthood but not necessarily with the number of children (16). Within our study, there was no significant gender difference in the relationship between religiosity and attitudes toward childbearing. Another investigation found that the intention to have a second child is stronger in men who regularly attend religious ceremonies. Men with monthly attendance at religious ceremonies are more inclined to have a second or third child compared to those without religious affiliations. This could be attributed to religious teachings that promote pronatalist norms and behaviors. Individuals participating in religious ceremonies often demonstrate greater commitment to these teachings, receiving both practical and emotional support (10). Additionally, the study by Mogi et al. highlighted that women with religious beliefs prioritize motherhood and family formation (16). Women with lower religious orientation tend to consider financial constraints and prefer smaller

families, whereas those with stronger religious orientations are more adaptable to such restrictions (17).

Based on the findings, a significant majority of college students pursuing higher degrees in medical and specialized fields (79.9%) exhibit a positive attitude towards childbearing. This positive inclination is evident across all subscales; however, it is noteworthy that the positive attitude towards childbearing in the belief subscale was weaker than the other subscales. Policymakers should take note of this finding, emphasizing the substantial relationship between the belief subscale and the desire for more children. There is a need for intervention plans to enhance the population by specifically strengthening this belief subscale. In a separate study, 60% of participants expressed positive intentions regarding having children in the next two years (18).

Concerning the subscales of attitudes towards childbearing, the belief subscale demonstrated a more pronounced presence in male students, married individuals and those expressing a desire for more children. Specifically, male and married students exhibited a belief that having only one child could pose a challenge to the future of the country, that children can provide support to families, and that it is crucial to perpetuate the human generation. They also felt a sense of responsibility for the increase in the country's Muslim population. Despite these findings, married individuals displayed a more negative economic attitude towards childbearing compared to their single counterparts, identifying economic challenges as a major obstacle to having children. However, among married students with stronger religious beliefs, the economic subscale was not perceived as a hindrance to having more children. In line with our results, another study indicated that an increase in positive fertility attitudes correlates with a higher desire among couples to have children, an increase in the desired number of children, and a decrease in the birth interval between children (3). Furthermore, Oshrieh et al. reported that while financial factors influence the desire to have children, it cannot be concluded that individuals with low socio-economic status lack a specific plan for having children (19).

This study investigated the impact of religiosity on the development of attitudes toward childbearing and fertility in a large community of medical students.

The findings emphasize the importance for planners and policymakers to design intervention plans aimed at promoting this influential factor.

Limitations

The present study has limitations. Being a single-center study conducted within the scientific community, which typically has relatively high education levels, the results may not be readily generalizable to all college students. Furthermore, as a cross-sectional study, it cannot establish causal relationships. However, the strength of our study lies in its unique exploration of religion as a predictor of population rates, a dimension seldom emphasized in previous research. Additionally, the use of web survey technology enhances the likelihood of obtaining accurate responses to inquiries about fertility and religion.

Conclusions

The findings of the present study reveal a direct relationship between religious orientation and college students' attitudes towards childbearing. A stronger sense of religiosity corresponds to a more positive attitude towards childbearing. Despite the participants expressing a low score in positive economic attitudes towards childbearing, this variable was not perceived as an obstacle to having children with the presence of the higher scores in the belief subscale of attitude and religion. This suggests that college students with a lesser desire to have children do not view the economic aspect as a hindrance, but their belief in the value and importance of children in their lives remains less positive.

Acknowledgements

The authors would like to thank Babol University of Medical Sciences for its support and also the college students participating in this study.

During the preparation of this work the authors used Chat-GPT in order to paraphrasing and grammatical editing. After using this tool, the authors

reviewed and edited the content as needed and takes full responsibility for the content of the publication. Furthermore, the authors thankfully acknowledge the scientific support provided by the Research and Technology Empowerment Committee of Babol University of Medical Science.

Authors contribution

All authors contributed to the study conception and design. Data collection by NF and analysis was performed by NF and SK. The first draft of the manuscript was written by FB and all authors commented on the manuscript. All authors read and approved the final manuscript.

Funding

This study was supported by a research grant 9706451 from Babol University of Medical Sciences.

Data availability statement

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Disclosure statement

The authors declared no conflict of interest.

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