Original Paper

Factors Affecting the First Childbearing Decision in Iranian Males

Marzieh Faghani Aghoozi[1] , Nourossadat Kariman[2] , Sanaz Faiazi[3] , Mona Joze Mohtashami[4] , Maliheh Amerian[1*]

1. Instructor, Department of Midwifery, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran.
2. Associate Professor, Department of Midwifery and Reproductive Health, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
3. Instructor, Department of Midwifery, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran.
4. Instructor, Department of Anesthesiology, School of Allied Medicine, Shahroud University of Medical Sciences, Shahroud, Iran.

ABSTRACT

Introduction: Childbearing results from a productive behavior within the family arisen from couples' decision to have children. The role of men in making decisions about childbearing and their intentions are often overlooked in studies.

Objective: This study aimed to investigate males' first childbearing decision and their contributing factors.

Materials and Methods: This was an analytical and cross-sectional study. In total, 300 married men aged 18-45 years participated in this study. The subjects accompanied their wives with the first pregnancy to receive prenatal care at hospitals and private health centers of Shahroud County, Iran. They were selected randomly. The required data were collected using A demographic form, Snyder's Adult Hope Scale (AHS), and World Health Organization Quality of Life (WHOQOL-BREF) questionnaire. The correlation between study variables was examined by Pearson's correlation coefficient and Multiple Linear Regression analysis.

Results: The Mean±SD age at first childbearing decision and age at marriage in men were 28.8±3.74 and 25.59±3.68 years, respectively. Among the factors related to first childbearing decision, age at marriage suggested the highest association (r=0.89, P=0.001). The age at first childbearing decision also had a statistically significant relationship with marriage duration (r=0.29, P=0.001), and education (r=0.16, P=0.001). Quality of life had a negative significant correlation with it (r=-0.22, P=0.001). Age at marriage revealed the highest power for predicting contributing factors. With the 10-year increase in men's marriage age, the age at first childbearing decision increased by 8.9 years; with the 1-point increase in quality of life score, the age decreased by 0.09 years, if other variables remained constant.

Conclusion: Age at marriage and quality of life could affect age at first childbearing decisions in men. The healthcare team and policymakers should facilitate childbearing conditions. This could be achieved by providing accurate knowledge about these factors. As a result, men can achieve the desired number of children at the right time.

* **Corresponding Author:**
Maliheh Amerian, MDc.
Address: Department of Midwifery, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran.
Tel: +98 (98) 32395054
E-mail: m.amerian43@yahoo.com

Highlights

● Childbearing results from a productive behavior within the family arisen from couples' decision to have children.

● Males' age at first childbearing decision is strongly related to age at marriage.

● Quality of life also affects the age at first childbearing decision of men. When couples are bio-psychologically facilitated to obtain information about the obstacles and problems of childbearing through various sources as well as the support of family and relatives, appropriate context is provided for their childbearing decision.

Plain Language Summary

Childbearing and a desire for being a mother/father are common in the Iranian society. Moreover, childlessness is not a desirable stage for couples. However, there is some evidence of delayed first births among recently married men. The current study investigated factors associated with first childbearing decision in men. The collected results suggested the effectiveness of quality of life, age at marriage, and education on this matter. Given the barriers and difficulties for couples, service providers must think of strategies and facilitate conditions for enabling men to reach the desired number of children at the right time. They should facilitate the first childbirth among people who are willing to study and work. Furthermore, couples must be assured about the existence of a balance between childbearing, education, and employment. Additionally, socioeconomic and family conditions must be appropriate for having children. Therefore, the diminishing effects of delayed first childbirth on future fertility could be controlled and the continued fertility decline be avoided.

Introduction

A Significant demographic change in developed countries is delayed childbearing, which is increasing [1]. In line with these developments, the parental age for men aged 30-49 years has steadily increased since 1980; however, parental rates have declined for men aged 25-29 years [2]. According to studies conducted in England and Wales, in 25% of births in 1993, men aged >35 years; this rate increased to 40% in 10 years. In the US, the childbearing rate of men >35 years has increased by 40% since 1980 [3].

In Iran, childbearing process has been commensurate with the changes occurring in various socioeconomic and traditional aspects of the family. Thus, the total rate of childbearing in 24 out of 30 provinces in Iran has decreased below 1.2 the replacement level. In addition, numerous studies in Tehran suggested that childbearing level is <1.5. This is mainly due to applying contraceptive methods in the early years of marriage [4]. Several studies have investigated factors affecting childbearing decision, such as contraception, increased education, women's employment, gender equality, changing values, poor economic conditions, and the lack of family support policies [5-9]. The effect of aging on women is a well-

known risk factor in fertilization and reproduction. Adverse pregnancy complications in women aged >35 years include the following: Spontaneous abortion, pregnancy complications, congenital malformations, and perinatal complications. Research on infant and childbirth outcomes has mainly focused on maternal age and related complications, and less considered father's role [10-12].

Numerous studies investigating the risks associated with increasing paternal age indicated that it changes the reproductive function at different levels. These levels include reproductive hormones production, sexual function, semen production, fertility, pregnancy outcomes, and some age-related defects and abnormalities [2, 13, 14]. Pregnancy at older ages in men leads to infertility; it also has adverse effects, such as fetal death, preterm delivery, low birth weight, congenital defects (cleft of lip and palate, and cardiac defects), achondroplasia, bone defects, Apert syndrome, schizophrenia, and childhood/adulthood cancers. Possible relevant mechanisms include gene mutations and structural chromosomes abnormalities in sperm, and multiple chromosomal defects. In addition to aging, other factors, like occupation, smoking, and environmental contamination can alter sperm quality. This could result in fetus's premature death [11, 15].

According to Bronfenbrenner's bioecological model, behavioral interactions occur in the microsystem at the individual level. Moreover, biological factors, intention, preparation, and planning affect childbearing [16]. As countries develop socioeconomically, the effects of individual intention and preference on the fertility behavior of people increases. In any human action whose goal is the same, the person's intention plays the most important role. Intention creates a favorable content for generating interest in individuals and eventually in their consent to perform an action [17]. One of other necessities of childbearing is to create hope in individuals. This is because if they do not have such feeling, they will abstain from marriage or, if marry, they will refrain from having child or will at most have one child. Miller and Pasta reported a significant relationship between fertility preferences and fertility intentions [18-20]. According to Miller, fertility preferences include three dimensions of childbearing desire, child-number desire, and child-timing desire [21].

Among studies on childbearing decisions in couples, the individual aspects of factors related to men's decisions for childbearing, such as hope and quality of life, have been overlooked. There is a lack of research that can discriminate between reported voluntary or involuntary (sexual dysfunction) intentions. Additionally, less attention has been paid to men's roles. Therefore, this study aimed to determine individual and demographic factors affecting first childbearing decision in men. It is hoped that the study results provide an overview of the current situation and a basis for designing appropriate interventions to facilitate decision making in this regard.

Materials and Methods

This analytical cross-sectional study was conducted in 2014 (March-September). It was approved by the Research Ethics Committee of Shahid Beheshti University of Medical Sciences. The study participants were 360 married Iranian men with no child and history of infertility. They aged 18-45 years and accompanied their wives to receive prenatal care at hospitals (n=4) and private health centers (n=4) of Shahroud County, Iran. We used a multi-stage cluster sampling method. First, Shahroud was divided into two regions of north (2 hospitals) and south (2 hospitals). Then, in each region, hospitals were considered as clusters. Next, some of these hospitals were randomly selected. Furthermore, sample size was determined proportional to the population covered by each hospital (considering 20% dropout rate for 10-15 samples). Eventually, the study samples were recruited from each hospital using convenience sampling technique. In private health centers located in the center of

Shahroud, random sampling was conducted. From 360 distributed questionnaires, 60 returned incomplete. Thus, they were excluded from the study analysis and the final sample size was determined as 300.

Data collection tools were as follows:

A demographic data form: It surveyed age, spouse's age, education, spouse's education, place of birth, place of residence, age at marriage, marriage duration, desired childbearing time interval and desired child number.

Snyder's Adult Hope Scale (AHS): It has 12 items rated on a 4-point Likert-type scale (1= definitely false; 4= definitely true) with two subscales of pathway (items 1, 4, 6, and 8) and agency (items 2, 9, 10 and 12). Additionally, 3, 5, 7, and 11 are filler items. The total obtainable score ranges from 8 to 32. Snyder et al. reported its test-retest reliability as α=0.81 [22].

World Health Organization Quality of Life (WHOQOL-BREF) Questionnaire: It has 26 items rated on a 5-point scale (from 1 to 5). It measures the dimensions of physical health, psychological health, social relationships, and environment. The collected scores are categorized into three levels of poor (0%-33.3%), moderate (33.4%-66.3%), and favorable (66.4% to 100%). It has an acceptable formal and structural validity and its test-retest reliability (using Cronbach's alpha coefficient) ranges from 0.55 to 0.84 [23-25].

In our study, the test-retest reliability and internal consistency of questionnaires were examined through a pilot study on 20 samples for 14 days. Correlation between questions for WHOQOL-BREF and AHS were obtained as 0.78 and 0.83, respectively. For their internal consistency, Cronbach's alpha coefficients of 0.86 and 0.75 were reported, respectively. After selecting the study participants, study objectives and methods were explained to them. They were also assured of the confidentiality of their information. After obtaining informed written consent from them, they completed the questionnaires. The collected data were presented using descriptive statistics. Pearson's correlation coefficient test was used for examining the relationship between study variables and men's age at the time of deciding to have the first child. This stage was followed by step-by-step multiple regression analysis. Data analysis was conducted in SPSS V. 16 at a significance level of P<0.05.

Faghani Aghoozi M, et al. Males' Decision in the First Childbearing. J Holist Nurs Midwifery. 2020; 30(1):27-34.

29

Results

For 300 participants, the Mean±SD scores of age at first childbearing decision, age at marriage, and marriage duration were 28.8±3.74, 25.59±3.68, and 3.17±1.68 years, respectively. The desired number of children was 2, and the desired childbearing time interval was 3 years. More than 40% of men had academic education and were mostly employed (45.3%). Moreover, 92.3% lived in urban areas and 43% in rented houses. The demographic characteristics of samples are presented in Table 1.

The mean scores of men's quality of life dimensions revealed that their environment-related scores were higher, compared to other dimensions. Moreover, most of them (80.3%) had favorable quality of life. For the AHS, the obtained results indicated that the men's mean score of hope in the agency subscale was slightly higher than that of the pathway subscale. The mean scores of dimensions of quality of life and hope variables are presented in Table 2.

For analyzing the collected data, first, the correlation of each variable with age at first childbearing decision was examined (Table 3). It was significantly related to age at marriage (r=0.891), and marriage duration (r=0.29), and men's education (r=0.001); however, it had no significant relationship with hope, the desired number of children, and desired childbearing time interval. Moreover, the quality of life had a significant negative correlation with age at first childbearing decision (r=-0.22, P=0.001). Age at marriage had the highest correlation with age at first childbearing decision (r=0.891, P=0.001).

The stepwise (Backward) linear regression analysis results are presented in Table 4. According to the results, the coefficients of age at marriage and quality of life variables were significant (P=0.001); however, those of hope, marriage duration, desired childbearing time interval, and desired number of children were not significant. Only the variables mentioned in Table 4 remained in the regression model. Among them, age of marriage had more power in predicting factories influencing age at first childbearing decisions. For 1-year increase

Table 1. The demographic characteristics of study participants

Characteristics	Category	No. (%)
Age (y)	18-22	10 (3.3)
	22.1-27	103 (34.3)
	≤27.1	187 (62.4)
Age at marriage (y)	13-18	3 (1.0)
	18.1-23	84 (28.0)
	23.1-28	162 (54.0)
	≤28.1	51 (17.0)
Men's education	Illiterate – elementary school	8 (2.7)
	Middle school	30 (10.0)
	High school	126 (42.0)
	Academic	136 (45.3)
Place of birth	Rural area	241 (80.3)
	Urban area	59 (19.7)
Occupation	Unemployed	10 (3.3)
	Self-employed	129 (43.7)
	Worker	23 (7.7)
	Employed	138 (45.3)

Faghani Aghoozi M, et al. Males' Decision in the First Childbearing. J Holist Nurs Midwifery. 2020; 30(1):27-34.

Table 2. The Mean±SD scores of quality of life and hope

Variable		Mean±SD
Physical health	-	26.73±3.91
QOL	Psychological health	22.44±4.25
	Environment	28.33±6.86
	Social relationships	11.88±2.26
	Total	96.64±12.31
Hope	Pathway	7.76±2.71
	Agency	11.78±2.85
	Total	19.54±4.82

Table 3. Correlation coefficients between study variables

Variable	Age at First Childbearing Decision
Age at marriage	0.891*
Hope	-0.016
Quality of life	-0.220
Marriage duration	0.292*
Education	0.16*

* P<0.001

Table 4. Multiple regression model coefficients

Variables	Unstandardized Coefficients		Standardized Coefficient (β)	t	Sig.
	B	Std. Error			
Constant	5.346	1.199	-	4.465	0.0001
Age at marriage	0.891	0.021	0.89	21.100	0.0001
Quality of life	-0.005	0.004	-0.092	-2.757	0.0001
Hope	-0.021	0.154	-0.003	-0.301	0.125
Marriage duration	0.007	0.114	0.112	10.653	0.146
Interval period of childbearing	0.005	0.052	0.008	0.304	0.156
Desired number of children	0.009	0.115	0.006	2.439	0.346

in marriage age, if other variables remained constant, the age at first childbearing decision of men increased by 0.89. In other words, with the 10-year increase in men's marriage age, the childbearing age increased by 8.9 years. Moreover, for 1-point increase in the quality of life, if other variables remained constant, age at first childbearing decision reduced by 0.09 years.

Discussion

In this study, marriage age and marriage duration suggested a significant and direct correlation with age at first childbearing decision in men. Furthermore, those who marry at a younger age can have their first child in a shorter time. Numerous studies have also reported that

Faghani Aghoozi M, et al. Males' Decision in the First Childbearing. J Holist Nurs Midwifery. 2020; 30(1):27-34.

31

age at first marriage is the main intervening factor and determinant of first childbearing time along with other related factors [26-28]; these findings are consistent with ours. Education also had a significant relationship with age at first childbearing decision in men. Adibi Sade et al. and Sadeghi et al. revealed the negative effect of men's educational level on fertility [29, 30]. Results of Kreyenfeld and Andersson on socioeconomic panel of German and Denmark indicated that the rate of fertility in highly educated people during unemployment is significantly reduced, compared to those with low education [27].

In our study, hope had no significant effect on age at first childbearing decision in men. Nilsen et al. explored individual and social factors of childbearing decisions in Norwegian older men [15]. As a result, depressive symptoms had a significant correlation with age at first childbearing in men. Results from other empirical studies recognized intention and interest in becoming a father as the strong predictors of outcomes related to childbearing decisions. This discrepancy between studies may be due to differences in the sociocultural conditions of studied societies. International studies have considered childbearing as an impetus for the promotion of the male character. Moreover, they suggested male independence and family motivation as individual factors influencing their childbearing decisions [1, 13, 31].

In the present study, quality of life was another contributing factor. In the study of Thompson and Lee, prerequisites for fathering in young Australian men were readiness and personal maturity before childbirth, financial security, and finding a permanent and flexible job [1]. Physical health/fitness and the lack of chronic diseases as essential causes of decision making for childbearing [1, 15, 16, 31, 32].

The study findings indicated that the age at first childbearing decision had a strong relationship with the age at marriage, compared to other factors. People delay their marriage and then with a short interval, give birth to their first child. Probably because of marrying at lower ages, to achieve high occupational readiness and financial security, they use contraceptive methods and delay the birth of their first child. The achieved results suggest that individual and family changes are accompanied by alternations in the values, motivations, attitudes, and beliefs associated with marriage and childbearing, and ultimately fertility behaviors and ideals. It is basically impossible to implement theories related to fertility increase without providing specific living and psychological conditions among people. Fertility reality is not a mere physical reality, but is rather a phenomenon based on individual intentions and thoughts. Among effective factors in this study, marriage age and life quality were more prominent than other individual factors.

This was a cross-sectional study; thus, it does not allow reliable decision-making processes. Moreover, cultural factors were not studied separately in our study. We suggest studying the role of new government policies in childbearing in the future. The study findings could provide a practical guide in terms of clinical, educational, and research contexts by accurate knowledge of individual factors related to first childbearing decision in men. The study results also present a direct insight into the social beliefs, values, motivations, and norms of the studied community.

Ethical Considerations

Compliance with ethical guidelines

The study protocols were approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran (No. 1393-1-86-13214).

Faghani Aghoozi m, et al. Males' Decision in the First Childbearing. J Holist Nurs Midwifery. 2020; 30(1):27-34.

References

[1] Thompson R, Lee C. Sooner or later? Young Australian men's perspectives on timing of parenthood. Journal of Health Psychology. 2011; 16(5):807-18. [DOI:10.1177/1359105310392091] [PMID]

[2] Kariman N, Amerian M, Jannati P, Salmani F. Factors influencing first childbearing timing decisions among men: Path analysis. International Journal of Reproductive Biomedicine. 2016; 14(9):589-96. [DOI:10.29252/ijrm.14.9.589]

[3] Alshahrani S, Agarwal A, Assidi M, Abuzenadah AM, Durairajanayagam D, Ayaz A, et al. Infertile men older than 40 years are at higher risk of sperm DNA damage. Reproductive Biology and Endocrinology. 2014; 12:103. [DOI:10.1186/1477-7827-12-103] [PMID] [PMCID]

[4] Kariman N, Simbar M, Ahmadi F, Vedadhir AA. Socioeconomic and emotional predictors of decision making for timing motherhood among Iranian women in 2013. Iranian Red Crescent Medical Journal. 2014; 16(2):e13629. [DOI:10.5812/ircmj.13629]

[5] Sedekia Y, Nathan R, Church K, Temu S, Hanson C, Schellenberg J, et al. Delaying first birth: An analysis of household survey data from rural Southern Tanzania. BMC Public Health. 2017; 17(1):134. [DOI:10.1186/s12889-017-4069-2] [PMID] [PMCID]

[6] Taghizadeh Z, Behmanesh F, Ebadi A. Marriage patterns and childbearing: Results from a quantitative study in North of Iran. Global Journal of Health Science. 2016; 8(3):1-9. [DOI:10.5539/gjhs.v8n3p1] [PMID] [PMCID]

[7] Islam A, Islam N, Bharati P, Aik S, Hossain G. Socio-economic and demographic factors influencing nutritional status among early childbearing young mothers in Bangladesh. BMC Women's Health. 2016; 16:58. [DOI:10.1186/s12905-016-0338-y] [PMID] [PMCID]

[8] Khadivzadeh T, Hadizadeh Talasaz Z, Shakeri MT. [Predicting factors affecting the delay in first childbearing among young married women using the Bandura's social learning theory (Persian)]. Hayat. 2017; 23(3):226-42.

[9] Saei Gharenaz M, Ozgoli G, Hajizadeh F, Sheikhan Z, Nasiri M, Jannesari Sh. [The relationship between religious orientation with intention of desired fertility and actual and desirable number of children in working women of Tehran, Iran (Persian)]. Journal of Research on Religion & Health. 2017; 3(1):79-90.

[10] Kariman N, Amerian M, Jannati P, Salmani F, Hamzekhani M. A path analysis of factors influencing the first childbearing decision-making in women in Shahroud in 2014. Global Journal of Health Science. 2016; 8(10):55381. [DOI:10.5539/gjhs.v8n10p24] [PMID]

[11] Jaleel R, Khan A. Paternal factors in spontaneous first trimester miscarriage. Pakistan Journal of Medical Sciences. 2013; 29(3):748-52. [DOI:10.12669/pjms.293.3388] [PMID] [PMCID]

[12] Ahmadi Z, Joz Mohtashami M, Seyed Fatemi N, Haghani H. [Study of relationship between social support and parent's satisfaction of provided care for premature infants in selected hospitals of Tehran University of Medical Sciences 1394 (Persian)]. Iranian Journal of Pediatric Nursing. 2015; 2(2):39-48.

[13] Sartorius GA, Nieschlag E. Paternal age and reproduction. Human Reproduction Update. 2009; 16(1):65-79. [DOI:10.1093/humupd/dmp027] [PMID]

[14] Ahmadi Z, Joz Mohtashami M, Seyyed Fatemi N, Haghani H. Comparing the social support which fathers and mothers of preterm infants receive in the neonatal intensive care units. Client-Centered Nursing Care. 2016; 2(2):83-8. [DOI:10.32598/jccnc.2.2.83]

[15] Nilsen AB, Waldenström U, Rasmussen S, Hjelmstedt A, Schytt E. Characteristics of first-time fathers of advanced age: A Norwegian population-based study. BMC Pregnancy and Childbirth. 2013; 13:29. [DOI:10.1186/1471-2393-13-29] [PMID] [PMCID]

[16] Benzies K, Tough S, Tofflemire K, Frick C, Faber A, Newburn-Cook C. Factors influencing women's decisions about timing of motherhood. Journal of Obstetric, Gynecologic & Neonatal Nursing. 2006; 35(5):625-33. [DOI:10.1111/j.1552-6909.2006.00079.x] [PMID]

[17] Amerian M, Kariman N, Janati P, Salmani F. [The role of individual factors in decision making for the first childbearing (Persian)]. Payesh. 2016; 15(2):143-51.

[18] Kazemipour Sh. [The evolution of marriage age of women in Iran and demographic factors affecting it (Persian)]. Women in Development and Politics (Women's Research). 2004; 2(3):103-24.

[19] Kennedy DP. Gender, culture change, and fertility decline in Honduras: An investigation in anthropological demography [PhD. dissertation]. Gainesville, FL: University of Florida; 2002.

[20] Miller WB, Pasta DJ. Behavioral intentions: Which ones predict fertility behavior in married couples? Journal of Applied Social Psychology. 1995; 25(6):530-55. [DOI:10.1111/j.1559-1816.1995.tb01766.x]

[21] Miller AR. The effects of motherhood timing on career path. Journal of Population Economics. 2011; 24:1071-100. [DOI:10.1007/s00148-009-0296-x]

[22] Snyder CR, Cheavens J, Sympson SC. Hope: An individual motive for social commerce. Group Dynamics: Theory, Research, and Practice. 1997; 1(2):107-18. [DOI:10.1037/1089-2699.1.2.107]

[23] Nejat S, Montazeri A, Holakouie Naieni K, Mohammad K, Majdzadeh SR. [The World Health Organization Quality of Life (WHOQOL-BREF) questionnaire: Translation and validation study of the Iranian version (Persian)]. Journal of School of Public Health and Institute of Public Health Research. 2006; 4(4):1-12.

[24] Yousefy AR, Ghassemi GR, Sarrafzadegan N, Mallik S, Baghaei AM, Rabiei K. Psychometric properties of the WHOQOL-BREF in an Iranian adult sample. Community Mental Health Journal. 2010; 46(2):139-47. [DOI:10.1007/s10597-009-9282-8] [PMID]

[25] Ghobary Bonab B, Lavasani M, Rahimi H. Hope, purpose in life, and mental health in college students. The International Journal of the Humanities: Annual Review. 2007; 5(5):127-32. [DOI:10.18848/1447-9508/CGP/v05i05/42113]

[26] Razeghi Nasrabad HB, Abbasi Shavazi MJ, Ghazi Tabatabaei M. [Multilevel analysis of factors effecting on firth birth timing in Iran, 1990-2000 (Persian)]. Women's Strategic Studies. 2012; 14(55):55-94.

[27] Kreyenfeld M, Andersson G. Socioeconomic differences in the unemployment and fertility nexus: Evidence from Denmark and Germany. Advances in Life Course Research. 2014; 21:59-73. [DOI:10.1016/j.alcr.2014.01.007] [PMID]

[28] Adair LE. Fertility decision making: To what extent do adaptations, social pressures, and individual differences influence plans to have a child? [MSc. thesis]. Manhattan, KS: Kansas State University; 2013.

[29] Adibi Sadeh M, Arjmand Siahpoush E, Darvishzadeh Z. [The investigation of fertility increase and effective factors on it among the Kord clan in Andimeshk (Persian)]. Journal of Iranian Social Development Studies. 2012; 4(1):81-98.

Faghani Aghoozi m, et al. Males' Decision in the First Childbearing. J Holist Nurs Midwifery. 2020; 30(1):27-34.

33

[30] Mir-Mohammad Sadeghi J, Tavakoli A, Vahedsaeed F. [The impacts of socio-economic and emographic factors on fertility (ضخ case study: Rural regions of Najaf-Abad Township) (Persian)]. Women in Development and Politics. 2010; 8(1):143-59.

[31] Sharma R, Agarwal A, Rohra VK, Assidi M, Abu-Elmagd M, Turki RF. Effects of increased paternal age on sperm quality, reproductive outcome and associated epigenetic risks to offspring. Reproductive Biology and Endocrinology. 2015; 13:35. [DOI:10.1186/s12958-015-0028-x] [PMID] [PMCID]

[32] Schytt E, Nilsen A, Bernhardt E. Still childless at the age of 28 to 40 years: A cross-sectional study of Swedish women's and men's reproductive intentions. Sexual & Reproductive Healthcare. 2014; 5(1):23-9. [DOI:10.1016/j.srhc.2013.11.001] [PMID]