

# Rate of use of contraceptive methods and risk factors in Tehran, the capital of Iran, in 2010 compared to other cities and regions

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## Summary

**Background:** Unwanted pregnancies and deaths from abortion cost the lives of 500 women daily. This study was designed to determine the rate of use of contraceptive methods and the risks. **Material and Methods:** This cross-sectional study was conducted in 2010 in Tehran, Iran. Total sample size was 304 participants who all filled out a questionnaire which had two parts. Data were analyzed by SPSS. **Findings:** The results showed that age ( $p = 0.003$ ), employment status ( $p = 0.001$ ), number of children ( $p = 0.001$ ), and marriage ( $p = 0.01$ ), had a significant relation with type of contraceptive method while, education did not correlate with contraceptive methods. **Discussion:** New and often younger couples with no experience about different contraceptive methods may tend to use natural methods because of their lack of knowledge of other techniques. Use of modern contraceptives early in marriage or even before marriage could be a good strategy.

**Key words:** Unintended pregnancy; Contraceptive methods; Birth control.

## Introduction

According to estimates published in 1998, 91,000 births occur worldwide each day; 50% of the pregnancies are unplanned and 25% are completely unexpected. Unwanted pregnancies and deaths from abortion cost the lives of 500 women daily [1]. Pregnancies in the second decade of life may interrupt and perhaps permanently interfere with the training and education of young women; young women in this age group may also not be ready to accept the responsibilities of parenthood, leading to severe psychological distress [2]. An investigation of 59% of patients with unwanted pregnancies who sought care at 35 health centers in areas north of Tehran Medical Hospital found that 35% of the patients had used the withdrawal method for contraception [3]. In the rural population covered by the Shahid Beheshti University [4], most women with unwanted pregnancies had used natural methods of contraception. Studies show that, despite the high failure rate of natural methods in some communities, there is much interest in their use, especially the withdrawal method. In our country, natural methods are the second most popular type of contraception, [5] and withdrawal, with a rate of 5.17%, is considered the most natural method. The prevalence of this method is 29.17% in Tehran [6], 25.75% in Tabriz [7], 20% in West Mazandaran [8], and 28.7% in Kashan [9]. In Bushehr [10], a 26.6% rate of use of the periodic method has been reported. Because the rates of use of natural methods of contraception are so high, we decided

to investigate the factors associated with the use of various types of contraception. The results may hopefully influence the way in which health policy makers design family planning programs.

## Methods

This cross-sectional study was conducted in 2010. All married women aged 15-49 years referred to health centers in urban and rural areas in the vicinity of Tehran Boomehen made up the study population. Sampling was multistage. In the first stage, according to the number of household health records, health centers in urban and rural areas in 217 villages were selected, and 71 cases were selected. The three urban centers and rural centers between two population centers were randomly selected. Then, in each center, systematic random sampling of the female population was conducted. Inclusion criteria were: not pregnant, menopausal, or infertile; no intention to become pregnant; lack of time to use two methods of contraception; and married and living with the spouse. Before data collection, participants were informed about the objectives of the research and told that their identities would be protected. Trained personnel administered the study questionnaire. The questionnaire included two parts: The first part contained 12 questions about demographics and obstetric history, and the second section included six questions about contraceptive methods, including natural methods. The validity of the questionnaire content was determined. The questionnaire was evaluated by eight faculty members of universities in Tehran and modified in accordance with their recommendations. The consistency of the results of two questionnaires administered two weeks apart was evaluated for 50 participants, and an  $r$  value of 0.84 was determined. For data analysis, SPSS software version 16 and descriptive statistics (frequency, mean, and standard deviation), ANOVA, and Student's  $t$ -test were used. A  $p$  value less than 0.05 were considered significant.

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Table 1. — Relationship between individual characteristics and types of contraceptive methods used by patients at health centers in Tehran in 2010.

Personal characteristics	Withdrawal method Number = 15	Condoms Number = 65	Method Number = 98	Intrauterine Number = 4	Permanent Number = 17	<i>p</i> value	
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD		
Age	30.22 ± 7.27	27.49 ± 5	30.12 ± 6.83	32 ± 6.05	34.17 ± 4.99	0.003	
Married	9.93 ± 7.8	7.07 ± 5.55	9.88 ± 6.83	10.25 ± 7.8	13 ± 7.33	0.01	
Number of children	1.7 ± 0.86	1.6 ± 0.8	1.81 ± 0.83	2.25 ± 0.5	2.87 ± 0.8	0.0001	
		n (%)	n (%)	n (%)	n (%)	<i>p</i> value	
Husband's education	Less than high school	47 (40.9)	12 (20)	38 (38.8)	1 (25)	8 (47.1)	0.99
	High school	45 (39.1)	34 (52.3)	41 (41.8)	2 (50)	6 (35.3)	
	University	23 (20)	18 (27.7)	19 (19.4)	1 (25)	3 (17.6)	
Wife's education	Less than high school	4 (34.8)	14 (21.5)	35 (35.7)	2 (50)	8 (47.1)	0.78
	High school	52 (45.2)	34 (52.3)	40 (40.8)	1 (25)	6 (35.3)	
	University	23 (20)	17 (26.2)	23 (23.5)	1 (25)	3 (17.6)	
Employment status	Housewives	101 (87.8)	55 (84.6)	87 (88.8)	3 (75)	15 (88.2)	0.0001
	Employed	14 (12.2)	10 (15.4)	11 (11.2)	1 (25)	2 (11.8)	
Location status	Rural	72 (66.6)	50 (76.9)	84 (85.7)	3 (75)	15 (88.2)	
	Urban	43 (37.4)	15 (23.1)	14 (14.3)	1 (25)	2 (11.8)	

## Results

In total, 304 participants were studied (more than 16 questionnaires were completed from each sample set). Overall 39.5% (120 participants) used natural methods, and 60.5% (184 participants) used medical contraceptive methods. Withdrawal, which was used by 37.8% (115 participants), was the most common method. Other natural methods had lower prevalence (periodic abstinence 0.7%; lactation 1%). Use of combined oral contraceptives was 27.3% (83 participants), condoms 21.4% (65 participants), and oral progestogen 2.6% (8 participants). Intramuscular progesterone, intrauterine devices, tubal ligation, and vasectomy were used by seven (2.3%), four (1.3%), 15 (4.9%), and two (0.7%), respectively. Significant differences in mean age, duration of marriage, and number of children were found among users of different contraceptive methods. The relationships between these characteristics and the use of withdrawal, hormonal methods, permanent methods, condoms, and intrauterine devices were also significant (Table 1). Overall use of contraception and use of individual methods (Table 2) were unrelated to women's educational level and employment status of both husband and wife. Natural methods were more commonly used in the city than in the countryside (Table 2). Reasons for the use of natural methods included fear of side-effects of other methods (50.6%), ease of use (36.5%), partner's reluctance to use other methods (32.6%), belief that success was as likely as with other methods (22.5%), and complications caused by using other methods (20%). Most participants gave more than one reason. Among those using natural methods, 23 patients (7.4%) had previously used other methods, most commonly combined oral contraceptive tablets (61.5%), and had discontinued them because of side-effects. The most common complication (23.5%) reported was nervous discomfort. The most common source of information about contraceptive methods were state employ-

Table 2. — Relationship between personal characteristics and the use of natural and medical methods of contraception among women at health centers in Tehran in 2010.

Personal characteristics	Natural methods (number = 120)	Medical method (number = 184)	<i>p</i> value
	Mean $\pm$ SD	Mean $\pm$ SD	
Age	30 $\pm$ 7.29	65.29 $\pm$ 6.35	0.65
Married	7.64 $\pm$ 9.8	79.31 $\pm$ 6.6	0.42
Number of children	1.68 $\pm$ 0.84	1.85 $\pm$ 0.85	0.10
	<i>n</i> (%)	<i>n</i> (%)	<i>p</i> value
Husband's education	48 (40)	60 (32.6)	0.25
Less than high school			
High school	48 (40)	83 (45.1)	
University	24 (20)	41 (23.3)	
Wife's education	42 (35)	52 (31.2)	0.49
Less than high school			
High school	53 (44.2)	81 (44)	
University	25 (20.8)	44 (33.9)	
Employment status	104 (86.7)	160 (87)	0.45
Housewives			
Employed	16 (13.3)	24 (13)	
Location status	76 (63.3)	152 (82.6)	0.0001
Rural			
Urban	44 (36.7)	32 (17.4)	

ees at health centers (63.4%), followed by neighbors and relatives (39.2%), books and magazines (15%), media (15%), doctors and midwives in private practice (13.9%), and personal experience (10%). Most participants cited more than one information source. Significant differences in information sources were found between users of different types of contraception ( $p = 0.07$ ). In comparison to users of medical methods, those who used natural methods were more likely to report personal experience (5.1 vs 3.9%) and obtaining information from healthcare workers (29.7% vs 22.8%) as information sources and

less likely to report obtaining information from books and magazines (1.7% vs 9.3%) and doctors and midwives in private offices (3.4% vs 4.4%).

## Discussion

According to DHS, IMES percentage of unwanted pregnancies in 2000 was equal to 24.1% compared to 18.6% in 2006. According to the Population Reference Bureau (2006), the percentage of married women aged 15-49 years using modern and total contraceptive methods is as follows:

Table 3. — *Percentage of contraceptive methods among married women 15-49 years old in Iran, less developed regions of Asia, and the developed world.*

*Contraceptive methods	World %	Iran %	Asia %	Less developed areas %	Developed areas %
Modern methods	54	56	59	53	58
Total methods	61	74	65	59	68

\*Percentage of contraceptive methods.

Natural methods of contraception have been used for centuries and are still a principal form of contraception in many societies. In this study, although the overall prevalence of natural contraceptive use was less than that for medical contraception, the nationwide rate of 17.8% [11] is important. Moreover, in some regions, the prevalence of natural methods is much higher than the national average [12]. This may reflect cultural differences and social and local beliefs. Withdrawal, at 37.88%, was the most commonly used natural method. Other reports also indicate a high prevalence of the use of withdrawal [6, 9, 12-14]. In our country, the prevalence of withdrawal in Gilan, Mazandaran, Semnan, Qom, and Tehran has been reported [11]. The frequency of use of this method in some areas has been reported to be less than that in the current study, including 28.7% in Kashan [9], 20% in West Mazandaran (15), 29.17% in Tehran [6], and 25.7% in Tabriz [7]. In Rasht, a prevalence of 38.8% [12] was observed, which is close to the percentage found in the current study. Differences in the quality of family planning implementation and training in different areas seem to be important. The percentage of use of the withdrawal method in Qazvin was 1.8%, which was much lower than the national average [16]. The frequency of use of other natural methods, including lactation (1%) and periodic methods (0.7%), was very low in this study. According to national studies, withdrawal is used by 17.5%, but other natural methods are used only by 0.5% [11]. Because the use of withdrawal is so prevalent, women may be less familiar with other natural methods, including periodic methods and those involving vaginal douching, and may have difficulty using them. However, it seems that not only enough knowledge and motivation should be needed in people and also create barriers to the use of known and reliable methods to deal with them is through the Occasion [9]. The rates in East Azarbaijan are 29.2 and 7%,

respectively [1], and those in ChaharMahal and Bakhtiari are 12.5 and 5% [11]. Couples may use natural methods of family planning because services that encourage their use are present in their communities. This type of information resource center is especially active in this field. The mean age in this study of women who used the withdrawal method coincided with the years of maximum fertility. Since these women did not want to conceive, the importance of safe contraceptive methods for them is obvious. Akbari A.A *et al.* reported that the average age of people who were using the withdrawal method was about 28 years [15]. Khalkhali *et al.* reported a sharp reduction in the use of natural methods with increasing age [17]. In general, more young people are dependent on methods that require changes in sexual behavior, such as natural methods [18]. As couples grow older and have more children, they seem to take birth control more seriously. Similarly, other studies have shown that marriage duration and number of children were significantly lower among users of the withdrawal method than among users of other methods [12, 19-21]. New and often younger couples with no experience about different contraceptive methods may tend to use natural methods because of their lack of knowledge about other techniques. The smaller size of their families may also be incentives for them to use less reliable methods of contraception. Starting to use modern contraceptives early in marriage or even before marriage could be a good strategy.

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