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Contraceptive method preferences of women living in Erzurum province: A cross-sectional study

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Abstract

The aim of this cross-sectional study was to investigate contraceptive preferences among women living in the province of Erzurum. Nine hundred ten women aged between 18 and 45 years, all of whom were using contraception, were enrolled in the study. Their sociodemographic characteristics and contraceptive methods were recorded. The data were presented as number, percentage, or mean values. Statistical analysis employed the chi square test, with a p value lower than 0.05 indicating statistical significance. While the majority of participants preferred modern techniques (85.5%), some 14.5% were still using traditional methods. The three most commonly used methods were intrauterine devices (IUDs) (34.94%), condoms (27.9%), and coitus interruptus (14.1%) ($p<0.001$). The proportion of women using modern methods was higher than for traditional methods for all education levels ($p<0.001$). The three most commonly used contraceptive methods among unemployed women were IUDs (35.8%), condoms (27%), and coitus interruptus (15.81%). Among the employed women, the most commonly used contraceptive method was condoms (33.11%), followed by IUDs (30.46%) and oral contraceptives (13.90%). The most popular method of contraception among participants with higher incomes was the condom, used by 40.35% ($p=0.005$). Whereas, the IUD was the most frequently used method among participants with low (46.25%) and middle (35.79%) income levels, followed by the condom (23.07%, 27.32%; respectively) ($p=0.005$). Despite the use of contraception, the pregnancy rate was 8.35%. Examination of the distribution of contraceptive methods used by women with unintended pregnancies showed that coitus interruptus exhibited the highest failure rate, at 51%. This was followed by condoms (23%) and IUDs (13%). The use of modern contraceptive techniques is more widespread than traditional methods in the province of Erzurum, and IUDs are the most common option. The effective use of contraceptive techniques is an important means of reducing numbers of unwanted pregnancies.

Keywords: Contraception, women, intrauterine device, condom, oral contraceptive, tubal ligation

Introduction

“Family planning” may be defined as the ability to decide on the number of children a couple desires at the time when they wish to have them. When examining contraceptive methods in use for family planning, there are two main categories to consider: traditional and modern. Traditional practices include the calendar and withdrawal (coitus interruptus) methods, while modern methods encompass condoms, intrauterine devices (IUDs), oral contraceptives, monthly injections, tubal ligation, and subcutaneous contraceptive implants.

The use of family planning techniques results in lower rates

of unintended pregnancy [1]. Nonetheless, the rates of use of different contraceptive methods may exhibit some variation between regions as a result of individual and socioeconomic factors [2,3]. Although use rates for modern birth control methods have increasing in Türkiye as a whole, traditional methods are still preferred in Eastern and Southeastern Anatolia [4]. This is closely associated with the low level of socioeconomic development in the region, insufficient education, and difficulties in accessing health services. Gender roles and women’s ability to make their own decisions within families are also key to the contraceptive choices made [2-4].

CITATION

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Previous studies have demonstrated that the choice of contraceptive method depends as much on social and cultural factors as on individual factors (such as age, education, income, marital status, and number of existing children) [5]. In particular, in areas with a dominant patriarchal structure, women have limited opportunities to make independent decisions about their own reproductive health [6]. The aim of the present study was to investigate which methods of family planning are preferred by women in the province of Erzurum. We also planned to examine parameters such as age, number of existing children, educational level, and number of unintended pregnancies experienced by the women who selected particular contraceptive methods and to investigate how these factors were related to the method of contraception used.

Material and Methods

This cross-sectional study was carried out with contraceptive-using women who attended the Erzurum City Hospital Obstetrics and Gynecology Clinic for gynecological examinations between 01.08.2024 and 01.05.2025. Ethical approval was obtained from the Medical Faculty of the Erzurum University of Health Sciences (Scientific Research Ethical Committee approval no: 2024/08-157). The patient's age, gravidity, number of living children, contraceptive methods used (calendar, condom, coitus interruptus, oral contraceptive, intrauterine device, tubal ligation, or monthly injection), duration of contraceptive use, and educational attainment (primary-secondary education or university) were all recorded. Women of reproductive aged 18-45 years who were using some form of contraception were included in the study. All participants were informed about the study and provided written consent before participation. Women under 18 or over 45, experiencing menopause, or not using contraception were excluded.

The Power and Sample Size Calculation application authored by R.V. Lenth was employed for analysis of statistical power. Analysis showed that 435 participants would be required to detect a difference of 5% (with an alpha of 5% and 80% power) between groups of women in terms of choice of contraceptive method, defined as modern or traditional. However, 910 patients were enrolled in the study, thereby increasing its statistical power.

Statistical Analysis

Statistical analysis was performed using the SPSS version 22.0 for Windows software. Categorical variables were presented as numbers and percentages and numerical variables as mean and standard deviation. The conformity of the data with normal distribution was assessed using the Kolmogorov-Smirnov test. Comparisons of categorical variables between groups were performed using chi-square analysis. A p value below 0.05 was considered statistically significant.

Results

The participants' demographic characteristics are shown in Table 1. The mean age of the participants was 36.61±7.83 years. The

average length of use of the current contraceptive method was 6.75±5.22 years. Despite the use of contraception, the pregnancy rate was 8.35%.

Table 1. Demographic characteristics of the study participants

	Mean±SD
Age	36.61±7.83
Gravidity	2.90±1.46
Number of live births	2.51±1.21
Duration of use of current contraceptive method (years)	6.75±5.22
Number of women who became pregnant despite using contraception n (%)	76 (8.35)

While the majority of participants preferred modern techniques (85.5%), some 14.5% were still using traditional methods. The three most commonly used methods were IUDs (34.94%), condoms (27.9%), and coitus interruptus (14.1%) (p<0.001) (Table 2). The three least used contraceptive method by participants were injectable preparations (2.08%), implant (1.64%), and calendar method (0.21%) (Figure 1). When the method of contraception chosen was assessed in terms of educational attainment, the proportion of women using modern methods was higher than for traditional methods for all education levels (p<0.001) (Table 3).

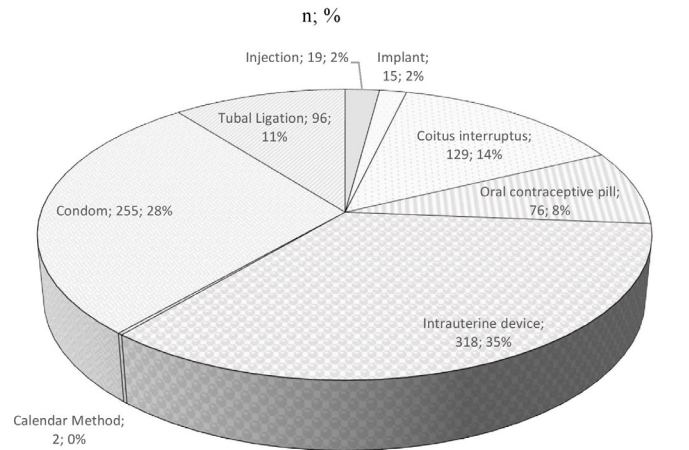


Figure 1. Graphical distribution of the contraceptive methods used by the participants

Table 2. Methods of contraception used by the participants

Contraceptive methods	n	%	P value
Intrauterine device	318	34.94	<0.001
Condom	255	28.02	
Coitus interruptus	129	14.17	
Tubal ligation	96	10.54	
Oral contraceptive pill	76	8.35	
Injectable preparations	19	2.08	
Implant	15	1.64	
Calendar method	2	0.21	
Total	910	100	

Table 3. Contraceptive methods used by the participants according to education level

Educational level	Traditional n (%)	Modern n (%)	P value
Illiterate	3 (7.89)	35 (92.10)*	<0.001
Primary school	53 (15.31)	293 (84.68)*	<0.001
High school/university	76 (14.44)	450 (85.55)*	<0.001

*p<0.001, when compared with traditional methods

When the distribution of contraceptive methods was examined in terms of employment status, the three most commonly used contraceptive methods among unemployed women were IUDs (35.8%), condoms (27%), and coitus interruptus (15.81%). Among the employed women, the most commonly used contraceptive method was condoms (33.11%), followed by IUDs (30.46%) and oral contraceptives (13.90%). Oral contraceptive pill use was higher in employed participants (13.90%) than in unemployed participants (7.24%) (p=0.042). However, the use of coitus interruptus method was higher in unemployed participants (15.81%) than in employed participants (5.96%) (p=0.023) (Table 4). When study participants were separated according to income levels, the most popular method of contraception among participants with higher incomes was the condom, used by 40.35% (p=0.005). The second most commonly used methods of contraception in this higher income group were either IUDs or

oral contraceptives, both at a rate of 17.54%. Whereas, the IUD was the most frequently used method among participants with low (46.25%) and middle (35.79%) income levels, followed by the condom method (23.07%, 27.32%; respectively) (p=0.005). (Table 5). Examination of the distribution of contraceptive methods used by women with unintended pregnancies showed that coitus interruptus exhibited the highest failure rate, at 51%. This was followed by condoms (23%) and IUDs (13%) (Figure 2).

Table 4. Contraceptive methods used by the participants according to employment status

	Employed (n=151)	Unemployed (n=759)	P value
Intrauterine device, n (%)	46 (30.46)	272 (35.83)	0.433
Injectable preparations, n (%)	8 (5.29)	11 (1.44)	0.762
Implant, n (%)	9 (5.96)	6 (0.79)	0.236
Coitus interruptus, n (%)	9 (5.96)	120 (15.81)*	0.023
Oral contraceptive pill, n (%)	21 (13.90)	55 (7.24)*	0.042
Calendar method, n (%)	0 (0)	2 (0.26)	0.766
Tubal ligation, n (%)	8 (5.20)	88 (11.59)	0.065
Condom, n (%)	50 (33.11)	205 (27.00)	0.564
Total	151 (100)	759(100)	

*p<0.05, when compared with employed participants

Table 5. Contraceptive methods used by the participants according to income level

	Low	Middle	High	P value
Intrauterine device n (%)	12 (46.15) ^b	296 (35.79) ^b	10 (17.54) ^a	0.005
Injectable preparations n (%)	0 (0) ^a	16 (1.93) ^a	3 (5.26) ^a	
Implant n (%)	0 (0) ^a	11 (1.33) ^a	4 (7.01) ^a	
Coitus interruptus n (%)	2 (7.69) ^a	123 (14.87) ^a	4 (7.01) ^a	
Oral contraceptive pill n (%)	1 (3.84) ^{a,b}	65 (7.85) ^b	10 (17.54) ^a	
Calendar method n (%)	0 (0) ^a	2 (0.24) ^a	0 (0) ^a	
Tubal ligation n (%)	5 (19.23) ^a	88 (10.64) ^a	3 (5.26) ^a	
Condom n (%)	6 (23.07) ^a	226 (27.32) ^a	23 (40.35) ^a	
Total	26 (100)	827 (100)	57 (100)	

Each subscript letter denotes a subset of income level categories whose column proportions do not differ significantly from each other at the 0.05 level

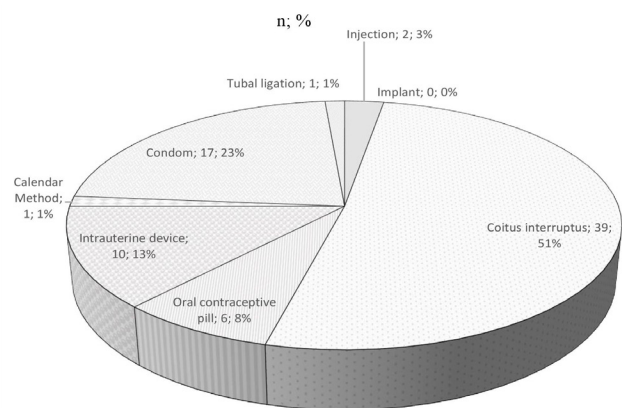


Figure 2. Distributions of women with unintended pregnancies according to the method of contraception used

Discussion

This study investigated the contraceptive methods employed by women in the province of Erzurum and some of the sociodemographic factors impacting that choice. Our observation was that women in the province of Erzurum prefer modern contraceptive methods to traditional ones, the most popular being IUD. In contrast to our findings, Bağbozan et al. [7] reported that women in Istanbul mostly employed coitus interruptus. A possible explanation for this difference may be that IUDs are fitted free of charge in the province of Erzurum and family planning services are readily accessible. The lower uptake of IUDs in Istanbul may be a consequence of access to hospital being more difficult and the larger numbers of patients there.

Women with higher education are more likely to defer pregnancy since they have access to more accurate information about birth control techniques and choose modern methods in order not to interrupt their educations [8]. Gavvas and Inal's [9] systematic review analyzed the results of 12 studies investigating women's use of family planning in Türkiye. They reported a low level of knowledge of family planning among women in the country, that the rate of use of modern techniques was also low, and that reliance on coitus interruptus was high. Those authors also reported that women with better education, with social insurance, and in employment exhibited more positive attitudes toward the use of family planning techniques. In the present study, the majority of women employed modern contraceptive methods. This finding may be explained by improved access to health services in a region undergoing urbanization, such as Erzurum, with women beginning to take control of their own fertility. In particular, the fact that IUDs and condoms are the most frequent options employed reflects a tendency toward methods that require less guidance and are less prone to user error.

The preference for modern methods seen in this study, irrespective of education, indicates that women are able to make better-informed and independent decisions about their own reproductive health. A previous study from the province of Diyarbakır [10] reached similar conclusions, noting that the use of modern methods, specifically IUD and oral contraceptives, increased in line with women's education levels. Another study from the province of Karabük investigating women's preferences regarding contraceptive methods and associated factors also reached a similar conclusion, describing IUDs as the most frequently employed method [11]. The fact that IUDs are a long-acting and reversible method may be an important reason for this preference.

IUD was the most frequently chosen contraceptive method among both working and unemployed women in this current study, with condoms in second place. While women with jobs used oral contraceptives as their third choice, coitus interruptus was the third most popular option among non-working women. This shows that economic dependency has a determining effect on contraceptive choices. Since opportunities for women without their own income to access health services and receive information are limited, there is a greater likelihood that these will opt for a more easily obtainable, but less effective, contraceptive solution. Similarly, the fact that contraceptive implants are only used by women in the high income bracket is an important indicator of economic and physical accessibility factors in the selection of these methods.

The unintended pregnancy rate of 8.35% in the present study indicates either that contraceptive methods are being used incorrectly, or that they lack sufficient efficacy. This is especially apparent for users of traditional methods such as coitus interruptus. Sedgh et al. [1] reported that unplanned pregnancy rates were significantly higher in communities using traditional contraceptive methods compared to modern methods. The data

obtained from Erzurum also confirm this risk. Not only does widespread use of contraceptives improve women's quality of life, it can also prevent maternal deaths. Nonetheless, a large number of women in low- and middle-income countries, including those of the Pacific region, continue to die as a result of complications associated with pregnancy [12,13].

This study, which reveals the current contraceptive choices among women in the province of Erzurum, represents a new addition to the literature. However, one limitation is that the study involved only patients registered with the obstetrics and gynecology clinic of Erzurum City Hospital and who were using some form of contraception. The findings may therefore only partially reflect the situation in the province as a whole. Another issue that should be taken into consideration is that health insurance in our country covers the cost of contraceptive methods except implants. Studies comparing contraceptive methods used by women with and without health insurance may be planned. Also, large-scale studies comparing the contraceptive method preferences of women in different provinces may be planned.

Conclusion

In conclusion, the use of modern contraceptive techniques is more widespread than that of traditional methods in the province of Erzurum, and the most frequently used method is the IUD. However, the persistence of traditional contraceptive methods indicates a continued risk of unintended pregnancy. It is not therefore sufficient merely to provide contraceptive services. At the same time, these services also need to be supported by activities aimed at informing women and raising awareness of contraception. Women's education, economic independence, and participation in decision-making processes are the most important determinants of effective fertility control. Accordingly, it is vitally important that health policies for the eastern regions of Türkiye comprise holistic strategies that target not only medical services but also the empowerment of women.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

The study was managed following the Declaration of HELSINKI principles, and Erzurum City Hospital Ethics Committee of approval (Decision no: 157, Date: August 1, 2024) was obtained.

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