

How do contraception preferences change over time? *Eight years of experience in a tertiary hospital*

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ABSTRACT

Objectives: To examine the contraceptive preferences of women based on their age and to track changes in these preferences over time.

Methods: This was an observational, retrospective cross-sectional study. Data from 2742 patients were evaluated for this study. The patient group of the first 4 years was classified as Group I (n=1371) and the last 4 years was classified as Group II (n=1371). The preferred contraception methods between the groups and their changes across the years were examined.

Results: Coitus interruptus was found to be the prevailing contraceptive method across all age groups, with 304 (70.9%) in 18-24 age group; 1314 (65.4%) in 25-40 age group; and 148 (48.8%) in 41-53 age group using this method. Breastfeeding rates were also analyzed across age groups, revealing that 11% of patients aged 18-24 years, 5% of patients aged 25-40 years, and 1.7% of patients aged 41-53 years were breastfeeding. Among these patients, 114 (74.5%) were not using any contraception method, while coitus interruptus remained the most popular choice.

Conclusion: It was determined that there are many couples who do not have sufficient knowledge regarding family planning and birth control in our country. At the same time, the use of birth control methods has increased due to the increase in the education level of women and easier access to sexual health services.

Keywords: contraception, contraceptive methods, family planning services

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Family planning encompasses all efforts enabling couples to have children when they want or to determine the desired number of children and birth

intervals according to their economic capabilities and personal preferences. Many sexually active individuals of reproductive age use various birth control methods. After years of research, various birth control methods with better efficacy, increased safety, simpler applications, and longer durations of action have been developed. Examples of these methods include: oral contraceptives containing estrogen and progesterone, condoms, vaginal rings, diaphragms, transdermal patches, progestin-only pills, subcutaneous implants, injectable medroxyprogesterone acetate, intrauterine devices, spermicides, and surgical sterilization in many countries.¹ In our country, factors such as a lack of knowledge regarding contraception methods, ethnic factors, socioeconomic and sociocultural factors, and education level affect the choice of birth control methods.

Side effects of contraceptive methods may vary depending on the method used, the body structure, and the sensitivity of the user.² Some women may experience groin pain or discomfort in the uterus. Every individual is different, and one person may tolerate a contraceptive method well, while another person may experience more side effects when using the same method. Side effects usually occur at the beginning of use and may subside within a few months. In case of side effects, a new contraceptive method or a change in dosage may be considered.³

Although a wide range of contraceptive options are available for women, various health conditions can limit the use of some birth control pills. Guidelines are available to categorize which birth control methods can be used in such cases. There are reasons why the recommended family planning methods are discontinued or changed for women. These reasons may include: partner preferences, educational status, and the desire to become pregnant.⁴ However, whether there has been a change in contraceptive preferences over the years has not been sufficiently investigated in the literature. The aim of our study was to determine the contraceptive preferences of Turkish women according to their ages and how these preferences have changed over the years.

Methods. This was an observational, retrospective cross-sectional study. All patients who presented to family planning clinic's in Kanuni Sultan Suleyman

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Training and Research Hospital, Istanbul, Turkey, between April 2012 and September 2020 and received contraception recommendations were included in the study. The patients were divided into 2 equal groups, those from the first 4 years and those from the last 4 years, to examine the change in contraception preferences across the years, taking into account factors such as globally changing economic conditions and COVID-19 infection. Their contraception preferences over the years were retrospectively reviewed. The study protocol was approved by Local Ethics Committee of Kanuni Sultan Suleyman Training and Research Hospital in Istanbul, Turkey (no.: 2020.06.62) and was designed in accordance with the principles of the Declaration of Helsinki.

Data from a total of 2742 patients were evaluated for this study. The patients from the first 4 years were classified as Group I (n=1371), and those from the last 4 years were classified as Group II (n=1371). Demographic data such as age, education level, obstetric history, comorbidities, and lactation status were evaluated. The currently used contraception method, recommended methods, their changes over the years, and recommended contraceptive preferences by age were compared between groups. For this comparison, age ranges were divided into 3 categories: 18-24, 25-40, and 41-53 years. The recommended contraception methods were evaluated between the 2 groups according to these age ranges. Other comorbid diseases were noted. A total of 21 different conditions were detected and the 3 most common conditions were reported. A total of 273 patients, whose hospital data could not be accessed, were excluded from the study.

Statistical analysis. Data were analyzed using the Statistical Package for the Social Sciences, version 23.0 (IBM Corp., Armonk, NY, USA). All data are represented as the mean \pm standard deviation (SD) and mean (minimum-maximum).⁵ Student's T-test was used to compare continuous parametric variables. The Chi-square test was carried out for categorical variables according to the classified measurement level. Fisher's Freeman Halton exact test was used in the Monte Carlo simulation analysis with a 99% confidence interval to compare the methods recommended to patients by year. A *p*-value of <0.05 was considered significant.

Results. The patients were divided equally into 2 groups, the first 4 years (Group I) and the last 4 years (Group II), with 1371 patients in each group. Demographic data, including age, obstetric background, and educational status, are shown in [Table 1](#). The mean age of all patients was 31.81 \pm 6.71

Table 1 - Demographic characteristics of the patients.

Variables	Group I (n=1371)	Group II (n=1371)
Age (years)	31.38 \pm 6.73	32.24 \pm 6.65
18-24	226 (16.5)	203 (14.8)
25-40	1000 (72.9)	1010 (73.7)
41-53	145 (10.6)	158 (11.5)
Gravity	3.41 \pm 1.83	3.33 \pm 1.68
Parity	2.57 \pm 1.34	2 \pm 1.20
Abortus	0.64 \pm 0.98	0.63 \pm 0.94
Curetage	0.18 \pm 0.4	0.13 \pm 0.34
Education		
None	138 (10.1)	123 (9.0)
Preschool	7 (0.5)	10 (0.7)
Elementary school	790 (57.6)	613 (44.7)
Middle school	171 (12.5)	303 (22.1)
High school	205 (15.0)	229 (16.7)
University	30 (2.2)	64 (4.7)
Master's degree	2 (0.1)	2 (0.1)
Doctorate	28 (2.0)	27 (2.0)
Values are presented as numbers and percentages (%) or mean \pm standard deviation (SD).		

years. The most commonly used contraceptive method among every age group was coitus interruptus, with 304 (70.9%) individuals aged 18-24 years, 1314 (65.4%) aged 25-40 years, and 148 (48.8%) individuals aged 41-53 years using this method. A total of 1048 patients had other diseases. Among these patients, the 3 most common diseases were: type 2 diabetes mellitus (T2DM; n=128, 4.7%), generalized anxiety disorders (n=97, 3.5%), and hypothyroidism (n=92, 3.4%).

Across all years, 185 (6.7%) patients were not using any method of contraception. The most commonly used method was coitus interruptus (n=1766, 64.4%). A different contraception method was recommended for 2314 (84.4%) patients. Intrauterine device (IUD) was the most recommended method (n=2028; 74%). Considering the age groups, the contraception methods recommended for the patients are provided in [Table 2](#). The contraception preferences used during admission and the recommended contraception methods between Groups I and II are shown in [Table 3](#).

The total number of patients who were breastfeeding in the study was 153 (5.6%). When the breastfeeding rates of patients in the different age groups were examined, it was found that 11% of patients aged 18-24 years, 5% of patients aged 25-40 years, and 1.7% of patients aged 41-53 years were breastfeeding. A total of 1265 (46%) of the patients in the study had a previous cesarean delivery. The mean age of the breastfeeding patients was 28 \pm 5.53 years. A total of 114 (74.5%) of the breastfeeding patients were not using any contraception method. The most commonly used

Table 2 - Recommended methods of contraception by age groups.

Recommended methods	Age (years)		
	18-24	25-40	41-53
None	1 (0.2)	3 (0.1)	0 (0.0)
Condom	41 (9.6)	217 (10.8)	99 (32.7)
IUD	352 (82.1)	1516 (75.4)	161 (53.1)
Depo-Provera	9 (2.1)	63 (3.1)	2 (0.7)
OCP	16 (3.7)	113 (5.6)	16 (5.3)
MPA	8 (1.9)	34 (1.7)	13 (4.3)
BTL	2 (0.5)	62 (3.1)	9 (3.0)
LNG-RIA	0 (0.0)	2 (0.1)	3 (1.0)

Values are presented as numbers and percentages (%). IUD: intrauterine device, OCP: oral contraceptive pill, MPA: medroxyprogesterone acetate, BTL: bilateral tubal ligation, LNG-RIA: levonorgestrel-releasing intrauterine system

Table 3 - Differences in recommended and at admission methods of contraception by the groups.

Study outcomes	Group I (n=1371)	Group II (n=1371)	P-values
<i>At admission contraceptive method</i>			
None	155 (11.3)	30 (2.2)	<0.001
Coitus interruptus	788 (57.5)	978 (71.3)	<0.001
Condom	134 (9.8)	91 (6.6)	<0.001
IUD	169 (12.3)	165 (12.0)	0.06
Depo-Provera	23 (1.7)	23 (1.7)	0.5
OCP	84 (6.1)	69 (5.0)	<0.001
MPA	16 (1.2)	14 (1.0)	0.003
LNG-RIA	2 (0.1)	1 (0.1)	<0.001
<i>Recommended contraceptive method</i>			
None	2 (0.1)	2 (0.1)	0.5
Condom	224 (16.3)	153 (9.7)	<0.001
IUD	941 (68.0)	1088 (79.4)	<0.001
Depo-Provera	41 (3.0)	33 (2.4)	<0.001
OCP	71 (5.2)	74 (5.4)	0.013
MPA	25 (1.8)	30 (2.2)	<0.001
BTL	65 (4.7)	8 (0.6)	<0.001
LNG-RIA	2 (0.1)	3 (0.2)	0.06

Values are presented as numbers and percentages (%). IUD: intrauterine device, OCP: oral contraceptive pill, MPA: medroxyprogesterone acetate, BTL: bilateral tubal ligation, LNG-RIA: levonorgestrel-releasing intrauterine system

contraception method among breastfeeding patients was coitus interruptus. A total of 120 (78.4%) breastfeeding patients were recommended to use an IUD.

Discussion. A family's decision to have a child depends on many factors. Some couples plan to have children and take the necessary measures to achieve this, while others may have children unintentionally. However, in the modern world, family planning allows couples to have children whenever they want to or to determine the desired number of children and birth intervals according to their economic conditions and personal preferences.⁶ In a study by Alsaleem et al,⁷ the most important factors associated with contraceptive

use were found to be age, education of women, gravida, number of living children, gender, and age of the last child. There are families in our country who do not have enough knowledge regarding birth control methods. The best example of this can be given as the most common contraception method used in every age group in this study which is coitus interruptus. In addition, factors such as ethnic factors, socioeconomic and sociocultural factors, and education level can also affect the choice of birth control methods.⁸ However, family planning centers can help in this situation and advise patients regarding which contraceptive methods can be used.⁹ As seen in the study data, different contraception methods were recommended to 84.4% of the patients. Type 2

DM, hypothyroidism, and generalized anxiety disorder, which are the most common comorbid diseases in the patient population in the study, were considered for the recommended contraception preferences.

Many factors, such as age, fertility, gender, and more, can influence a person's choice of contraception. Young women often prefer oral contraceptives or condoms. These methods are low-cost, easily accessible, and less invasive.¹⁰ Older women, on the other hand, may prefer long-term birth control methods. Long-term methods of contraception ensure that birth control is continuous and effective. Older women may not use contraception due to the end of their fertile period. Therefore, it should be considered that people of different age groups may choose other methods of contraception.¹¹ In our study, when examining the 3 different age groups, the number of patients with condom use decreased as the age increased. On the other hand, IUD use rates were higher in the group aged 18–40 years than in the older age group. In addition, hormone-containing methods were not preferred by women over the age of 40 years.

The use of contraception methods has increased worldwide in recent years, but financial concerns remain an obstacle for many people. In many countries, especially in low- and middle-income countries, the increasing use of contraception is due to women's increased education levels and easier access to sexual health services. However, in many countries, high costs and limited access to contraceptive products are still barriers for many women.¹² The withdrawal method is widely used as an alternative to high-cost contraceptive methods. However, the effectiveness of the withdrawal method is lower than that of other methods and may lead to unwanted pregnancies. The use of condoms and oral contraceptives has decreased in recent years. This may be because alternative methods are becoming more common. In addition, the inadequacy of campaigns promoting sexual education, the COVID-19 pandemic, and contraceptive use in some countries may also contribute to this decrease.¹³ Similarly, our study showed that in the last 4 years, the number of people who wanted to use contraception increased significantly compared to the first 4 years. In contrast, the use of condoms and oral contraceptive pill (OCP) decreased significantly. The use of the coitus interruptus method increased. The financial crises experienced in our country and even worldwide in recent years may be the reason for this.

Although the opposite is seen in some countries, the breastfeeding rates increased as maternal age decreased in Turkey.¹⁴ These data reveal that the breastfeeding

behaviors of mothers in different age groups vary and that young mothers prefer to breastfeed. At the same time, studies have shown that as the number of cesarean sections and age increases, the probability of undergoing bilateral tubal ligation (BTL) also increases. Regret rates seem to be high in women with BTL carried out at a young age. The BTL, which is among the methods recommended to patients in our study, has been recommended for women with advancing age, supporting the literature.

The choice and use of birth control methods depend on many factors and cannot be based solely on education level. Factors such as sexual education, cultural norms, economic status, religion, partner attitudes, and access to health services can also have an impact on birth control method preferences. Demir et al¹⁵ showed that there was an inverse relationship between education status and coitus interruptus in their study. In our study, it is clear that there was a similar relationship.

Future research should focus on identifying the factors that affect the acceptability of each method. If these factors can be identified, we can develop strategies to increase the acceptability of contraceptive methods or help women find a suitable method based on their preferences.

Study limitations. The most important limitations of the study are that it is retrospective and single-centered.

In conclusion, in our study, it was clearly seen that there are many couples in Turkey who do not have enough knowledge regarding family planning and birth control. The most common birth control method in all age groups was the withdrawal method. At the same time, the use of birth control methods has increased due to the increase in the education level of women and easier access to sexual health services. In addition to these points, information is given regarding the different factors that may be effective in the selection of a birth control method. In addition, the rates of breastfeeding differed according to age in Turkey, and the use of the BTL method increased with increasing cesarean deliveries and age.

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