

## THE USE OF CONTRACEPTIVE METHOD PATTERNS: EVALUATION AT FAMILY HEALTH CENTERS\*

### KONTRASEPTİF YÖNTEM KULLANIM DURUMU: AİLE SAĞLIĞI MERKEZİNDE DEĞERLENDİRME

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#### ABSTRACT

**Objective:** Family planning is one of key responsibilities of family physicians; providing birth control methods, and ensuring its practical application remains important for maternal and child health. The aim of this study is to determine the contraception methods used by the individuals who applied to Family Health Centers (FHC) and to reveal the relationship between family planning methods chosen.

**Material and Methods:** A descriptive research method was adopted for this study using the follow-up records of the FHCs. One thousand two hundred thirty-two follow-up records in total were accessed between March 2018 and December 2018, and SPSS 21.0 was used for data analysis.

**Results:** Mean ranks provide evidence that age scores were higher for the users of tubal ligation, and this group had significantly more children than the users of combined oral contraceptives ( $p<0.001$ ), condom ( $p<0.001$ ) and intrauterine device ( $p=0.043$ ). When all the follow-ups were evaluated, it was seen that the number of people who did not use contraceptive methods was high.

**Conclusion:** Family planning and sexual education are associated with the availability and sustainability of resources that are crucial for healthcare. It remains important to provide Family Planning counseling to those who do not use any contraceptive method during the follow-up.

**Keywords:** Family planning, women's health, birth control, family medicine

#### ÖZET

**Amaç:** Aile planlaması, aile hekimlerinin temel sorumluluklarından biridir; doğum kontrol yöntemlerinin sağlanması ve pratik uygulamasının sağlanması anne ve çocuk sağlığı için önemini korumaktadır. Bu çalışmanın amacı, Aile Sağlığı Merkezlerine (ASM) başvuran bireylerin kullandığı kontrasepsiyon yöntemlerini belirlemek ve seçilen aile planlaması yöntemleri arasındaki ilişkiyi ortaya çıkarmaktır.

**Gereç ve Yöntemler:** Bu çalışma için ASM'lerin izlem kayıtları kullanılarak tanımlayıcı bir araştırma yöntemi benimsenmiştir. Mart 2018 ve Aralık 2018 tarihleri arasında toplam 1232 takip kaydına erişilmiş ve veri analizi için SPSS 21,0 kullanılmıştır.

**Bulgular:** Tüp ligasyonu kullananların yaş ortalamaları daha yüksekti ve bu grup kombine oral kontraseptif ( $p<0,001$ ), prezervatif ( $p<0,001$ ) ve intrauterin araç ( $p=0,043$ ) kullananlardan daha fazla çocuk sahibiydi. Tüm izlemler değerlendirildiğinde kontraseptif yöntem kullanmayanların fazla olduğu görüldü.

**Sonuç:** Aile planlaması ve cinsel eğitim, sağlık hizmetleri için çok önemli olan kaynakların mevcudiyeti ve sürdürülebilirliği ile ilişkilidir. Herhangi bir kontraseptif yöntem kullanmayanlara izlemler sırasında Aile Planlaması danışmanlığı verilmesi önemini korumaktadır.

**Anahtar Kelimeler:** Aile planlaması, kadın sağlığı, doğum kontrolü, aile hekimliği

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## INTRODUCTION

Equity should be one of the principles of all nations' health systems. "Health for all" is a family physician principle adopted at the Astana Declaration last year. The Astana Declaration recognizes that many people need better access to healthcare, particularly the poor, and states that it is "unacceptable that inequity in health and disparities in health outcomes persist" (1).

The United Nations Third-World Women's Conference in Nairobi was an important point about "equality, development and peace" and "employment, health and education" (2). In 1994, the World Health Organization (WHO) prepared the "Mother-baby package" with UNDP, UNICEF, UNFPA, World Bank, and some of the governments and universities. In this way, organizations declared that reducing the number of unwanted pregnancies is one of the key points for making motherhood safe (3). These were some of the milestones for women's health (4).

Contraception method choices are different all over the world. Biological, psychosocial, and cultural determinants in the regulation of fertility affect the use and selection of contraceptives. Among adolescent and young adults in Finland, the first option for adolescents is condoms, backed-up by emergency contraception; and later hormonal contraceptives in a longer, mutually monogamous relationship. Condoms and hormonal contraception combined can be well recommended for adolescents as dual protection. Long-acting reversible contraception (LARC), including both intrauterine contraception and implants, are safe and highly effective, and thus well suited for adolescents (5). The research among 15-49 year-old women in Nepal has reported that oral contraceptives (OCs) were the most preferred method. The second method was injections, but after a one-year education, the choices changed to injections first and condoms second. Women's fear of their partners also affected the choice of contraceptive methods. The most striking outcome of this research is the women who feared their partners were more likely to choose female sterilization than condoms. Therefore, more education and reduction of the fear of partners could change contraceptive behaviors (6). Yusuf et al. researched intimate partner violence (IPV) versus knowledge and use of contraception methods in the African region. They reported no significant difference between the victims of IPV compared to non-victims, for not only the level of knowledge, but also the actual usage of contraception. This study also revealed, "If a woman knew or used traditional and folkloric methods, traditional method took priority" (7). In Bangladesh, 15,699 married women were evaluated, and it was reported that rural women used contraceptive methods less than urban women. Religious teachings also affect

the usage of contraceptive methods (8). Another point is that women with higher autonomy have higher rates of contraceptive use (9).

Although contraceptive pills for men are in the process of development, condoms, coitus interruptus (CI), and vasectomy are the methods currently used. In the United States, OCs are the most popular reversible contraceptive method, while the usage rates of condom and OCs increased due to greater gender equity (10, 11).

The first-year failure rate of OCs in USA ranges from 3% to 27% (10). According to research, for women living in poverty and relying on a partner-dependent method (such as the condom or CI), failure rates are greater (12).

The first family planning initiatives in Turkey were implemented in 1965. This program was designed to give education for promotion of birth control methods and the family planning (13). "Mother and Childcare and Family Planning Centers" are giving service for couples and families while this care is the responsibility of "Family Health Centers".

In 1974, a sexual health education program for couples was implemented in the rural part of the Ankara region (33 villages situated 20-50 km northwest of Ankara). The structured education had two steps: one to one, and group programs. This initiative was effective, and the education programs were repeated in other primary care health centers (14).

On May 27, 1983, the No. 2827 "Population Planning Code" was implemented, and in the same year in November, new abortion rules were also published in Turkey. Until this date, many women died because of "self-induced abortion". Due to this regulation, free healthcare services for abortion were provided by the state (15). In 2013, because of the sexual health education programs and services at family healthcare services, and Mother and Childcare and Family Planning Centers, the rates of modern contraceptive methods rose to 47%; until the early 2000s, CI had been the most preferred method among Turkish couples (16).

## MATERIALS AND METHODS

A descriptive research method was adopted for this study using the follow-up records of the Family Health Centers (FHC) in Izmir. According to the sample formula, the minimum number of participants to be reached with 80% power and 95% confidence interval was calculated as 384. One thousand two hundred thirty-two follow-up records were accessed in total between March 2018 and December 2018, and SPSS 22.0 was used for data analysis. The sample was from different settlements of the city, so that different demographic and health characteristics could be presented (Table 1).

**Table 1:** Demographic and health information of the participants

Variable	n	%	M	SD	Min.	Max.
Age	896		31.65	9.366	15	49
Marital status	253					
Single	137	54.2				
Married	100	39.5				
Divorced	16	6.3				
Maternity	533	59.5			0	9
Live birth	492	54.9			0	7
Stillbirth	10	27.1			0	2
Miscarriage	148	38.5			0	5
Self-induced abortion	58	31.1			0	4
Therapeutic abortion	6	26.8			0	2
Contraceptive use/non-use	1216					
Combined oral contraceptives	56	4.6				
Intrauterine device	124	10.2				
Condom	228	18.8				
Tubal ligation	66	5.4				
Coitus interrupts	91	7.5				
Non-use of contraceptive methods	651	53.5				

## RESULTS

The age of the participants ranged from 15 to 49 (M=31.65, SD=9.366). Of the sample, 137 (54.2%) were single, 100 (39.9%) were married, and 16 (6.3%) were divorced. As displayed in Table 2 and Table 3, due to the non-normal distribution of the tested variables, Kruskal-Wallis H tests were used to compare the mean differences of age, and the numbers of FHC visits, maternities, live births, stillbirths, children, miscarriages, self-induced abortions, therapeutic abortions and congenital anomalies between the users of CI, combined OCs, condoms, intrauterine devices and tubal ligation, and the non-users of contraceptive methods. Dunn's pairwise tests as post hoc tests, and Bonferroni corrections were performed for the six-paired groups. Also, a chi-square analysis was run to investigate the relationship between marital status and the use and the non-use of contraceptive methods. However, 61 percent of the cells had an expected count less than 5, which violated one of the chi-square test assumptions. Therefore, the chi-square analysis was not reported.

The mean ranks of age scores were 362 for the non-use of contraceptive methods, 460 for the use of combined OCs, 568 for the use of condom, 586 for the use of intrauterine device, 611 for the use of CI and 728 for the use of tubal ligation. Bonferroni corrections showed that there were significant differences between the non-

use of contraceptive methods and the uses of condom, intrauterine device, CI, and tubal ligation. Regarding mean ranks, age scores were lower among those who did not use any contraceptive methods compared to those using the condom ( $p<0.001$ ), intrauterine device ( $p<0.001$ ), CI ( $p<0.001$ ) and tubal ligation ( $p<0.001$ ). Furthermore, there were statistical differences between the use of tubal ligation and the uses of combined OCs and condom. Mean ranks evidenced that age scores were higher for the users of tubal ligation than the users of combined OCs ( $p<0.001$ ) and condom ( $p=0.006$ ).

Family health center visit scores' mean ranks were 509 for the use of condom, 594 for the use of intrauterine device, 631 for the non-use of contraceptive methods, 684 for the use of tubal ligation, 689 for the use of CI and 742 for the use of combined OCs. Bonferroni corrections and mean ranks demonstrated that FHC visit scores were significantly lower for the condom users than the users of tubal ligation ( $p=0.002$ ), CI ( $p<0.001$ ), combined OCs ( $p<0.001$ ) and the non-users of contraceptive methods ( $p<0.001$ ).

The mean ranks of maternity scores were 336 for the non-use of contraceptive methods, 500 for the use of combined OCs, 594 for the use of condom, 643 for the use of intrauterine device, 647 for the use of CI and 767 for the use of tubal ligation. According to the Bonferroni corrections and mean ranks, maternity scores of the non-users

**Table 2:** Kruskal-Wallis H test ranks

Grouping variable	Combined oral contraceptives	Intrauterine device	Condom	Tubal ligation	Coitus interrupts	No use
<b>Age</b>						
N	32	78	194	41	42	525
Mean rank	460	586	568	728	611	362
<b>Family health center visits</b>						
N	56	126	231	66	91	662
Mean rank	742	594	509	684	689	631
<b>Number of maternities</b>						
N	32	78	194	41	42	525
Mean rank	500	643	594	767	647	336
<b>Number of live births</b>						
N	32	78	194	41	42	525
Mean rank	507	650	608	793	664	326
<b>Number of children</b>						
N	32	78	194	41	42	525
Mean rank	510	650	605	732	661	327
<b>Number of miscarriages</b>						
N	32	78	194	41	42	525
Mean rank	476	481	490	508	467	435
<b>Number of self-induced abortions</b>						
N	32	78	194	41	42	525
Mean rank	455	484	454	526	469	447
<b>Number of congenital anomalies</b>						
N	32	78	194	41	42	525
Mean rank	467	377	386	458	357	502
<b>Number of stillbirths</b>						
N	32	78	194	41	42	525
Mean rank	452	463	456	452	462	456
<b>Number of therapeutic abortions</b>						
N	32	78	194	41	42	525
Mean rank	454	454	458	454	454	457

were significantly lower than for those using combined OCs ( $p=0.006$ ), condom ( $p<0.001$ ), intrauterine device ( $p<0.001$ ), CI ( $p<0.001$ ) and tubal ligation ( $p<0.001$ ). Maternity scores of the users of tubal ligation were even higher for those who used the methods of combined OCs ( $p<0.001$ ) and condom ( $p=0.001$ ).

Mean ranks of live births were 326 for the non-use of contraceptive methods, 507 for combined OCs, 608 for condom, 650 for intrauterine device, 664 for CI and 793 for tubal ligation. According to the Bonferroni corrections and mean ranks, live births among the non-users of contraceptive methods were significantly lower

**Table 3:** Kruskal-Wallis H test statistics

Grouping variable	Chi-square	df	Asymp. sig.
Age	178.737	5	.000
Family health center visits	42.444	5	.000
Number of maternities	306.225	5	.000
Number of live births	371.782	5	.000
Number of children	365.738	5	.000
Number of miscarriages	22.005	5	.001
Number of self-induced abortions	23.531	5	.000
Number of congenital anomalies	69.071	5	.000
Number of stillbirths	3.112	5	.683
Number of therapeutic abortions	1.773	5	.880

than among users of combined OCs ( $p=0.001$ ), condom ( $p<0.001$ ), intrauterine device ( $p<0.001$ ), CI ( $p<0.001$ ) and tubal ligation ( $p<0.001$ ). In addition, the users of tubal ligation had significantly more live births than the users of combined OCs ( $p<0.001$ ), condom ( $p<0.001$ ) and intrauterine device ( $p=0.043$ ).

The mean ranks of children were 327 for the non-use of contraceptive methods, 510 for the use of combined OCs, 605 for the use of condom, 650 for the use of intrauterine device, 661 for the use of CI and 792 for the use of tubal ligation. Bonferroni corrections and mean ranks provided evidence that the numbers of children among the non-users of contraceptive methods were significantly lower than among users of combined OCs ( $p=0.001$ ), condom ( $p<0.001$ ), intrauterine device ( $p<0.001$ ), CI ( $p<0.001$ ) and tubal ligation ( $p<0.001$ ). In addition, the users of tubal ligation had significantly more children than the users of combined OCs ( $p<0.001$ ), condom ( $p<0.001$ ) and intrauterine device ( $p=0.043$ ).

Miscarriage mean ranks were 435 for the non-use of contraceptive methods, 467 for the use of CI, 476 for the use of combined OCs, 481 for the use of intrauterine device, 490 for the use of condom and 508 for the use of tubal ligation. Pairwise comparisons based on the Bonferroni corrections showed only one significant difference, that miscarriage scores among the users of condom were higher than the non-users of contraceptive methods ( $p=0.002$ ).

Self-induced abortion mean ranks were 448 for the non-use of contraceptive method, 454 for the use of condom, 455 for the use of combined OCs, 469 for the use of CI and 526 for the use tubal ligation. According to Bonfer-

roni corrections and mean ranks, self-induced abortion was higher among the users of tubal ligation than the condom users ( $p=0.004$ ) and the non-users of contraceptive methods ( $p<0.001$ ).

The mean ranks of congenital anomalies were 358 for the use of CI, 377 for the use of intrauterine device, 386 for the use of condom, 458 for the use of tubal ligation, 467 for the use of combined OCs, and 502 for the non-use of contraceptive methods. Bonferroni corrections and mean ranks evidenced that congenital anomalies were significantly higher among those who used no contraceptive methods than the users of CI ( $p<0.001$ ), intrauterine device ( $p<0.001$ ) and condom ( $p<0.001$ ).

## DISCUSSION

In Turkey, 26.5% of couples reported that they do use contraceptive methods, according to the data Turkish Population and Health Surveys (TNSA) 2013. According to the TNSA 2013 reports, the most preferred method is withdrawal/coitus interruptus (CI) (25.5%) and the second preferred method is IUDs (16.8%) and after that, condom (15.8%) (17). In research from India, Kovavisarath E et al. reported that 70% of the participants used "coitus interruptus" (CI), and is defined as a male contraceptive method where the penis is withdrawn before ejaculation and is not considered an effective form of contraception (18). In Bingöl, the most frequently used methods were CI (23.1%), IUD (21.5%), condom (19.8%) and OC (13.9%) (19). In 2007, Bozkurt et al. reported that 40.7% women used CI (while IUDs were the most common method, and condom, the third). In this study, younger women (between 17-30 years old) chose condom as a contraceptive method, while older ones (45 years and older) used IUDs. Nevertheless, CI is in the top three of the list (20). Kulczycki revealed this result as a "husband-wife agreement" but provided no evidence that this contraceptive method tends to be a more "egalitarian mode of reproductive decision making" (16). Another study in Diyarbakir reported that 42% of the women preferred to use a contraceptive method but were unable to, and 57% used CI (21). Thus, the ratios change over the age groups and according to location. In a study performed in Ankara, 65.2% of women use a birth control method. In our study, most of the women chose tubal ligation, OCs and /or IUDs (728, 480 and 586 respectively), in contrast to Tountas, who reported these methods as "limited" (22). This result should be analyzed as to whether this is a co-decision procedure structured by the couples, or whether women are following the choice of their sexual partners, because for 611 women, coitus interruptus was still used as a contraceptive method.

Ilhan et al. investigated the choices of women between 15-49 years old, and reported that IUDs were the most used method, while condom was the third (23). Our study

revealed the same results, with IUDs as the one of the top three methods. Oral contraceptives, condoms, and IUDs are available for free from FHCs. These results are associated with availability and sustainability, which are crucial for healthcare.

Those using the tubal ligation method were older than those using OCs. This could be because the older women had reached the planned number of children, unlike the younger ones (significantly, the maternity scores of the users of tubal ligation were even higher for those who used combined OCs methods ( $p < 0.001$ ) and condom ( $p = 0.001$ ).

In our study, age scores were significantly lower for those who did not use contraceptive methods. One of the main reasons for this result could be the desire to have a baby, or not being in a sexual relationship. Tountas et al. from Greece reported that adolescent participants must be considered more carefully (22). Both Tountas and our study revealed that the great majority of women followed their sexual partners' choices, particularly for condom or CI. In the study of Kokanalı et al. *coitus interruptus*, may have been the most chosen because it was the first choice of adolescents that have undergone voluntary termination. After the contraception methods education, they chose neither the rhythm method nor *coitus interruptus* (24). Sufficient and well-structured counseling about contraception is still the optimal option. Sexual education is needed not only for legally married women, but also for single women and for the most vulnerable, such as adolescents. Well-structured sexual education focused on sexual abuse, contraceptive methods and prevention of sexually transmitted diseases are needed in public health, and should consider the features of the community, and changes in families/sexual partners caused by migration, COVID-19, etc.

Self-induced abortion seems to be an ongoing problem affecting women and babies' health and lives. Further research is needed to find the root reasons. Family planning is also a socio-economic issue (13). Gumus et al. reported that pregnant women who describe a negative body image also described negative relations with their husbands. This finding was significant among low-income families, although in this group, 80.7% of women reported planning their pregnancy (25). Ending an unwanted pregnancy has also been subject to legislation. Not only the women's but also the "legal" husband's approval is needed (15). Care for the baby and the mother is an important responsibility of the state.

Some studies reported that the "educational status" could affect the "practiced contraceptive method" (4, 26, 27). For example, Dođru et al. has reported that for female university graduates, 69.2% use modern methods (28). Being employed could also affect the method. In 2013, The Turkish Demographic and Health Survey

(TDHS) revealed that employed women preferred modern contraceptive methods over traditional (17). In various societies, the decision to choose the contraceptive method is made by the husband and/or mother-in-law, rather than the woman (4). This traditional situation has negative effects: if the woman needs to get the consent/approval of the decision-makers, the method is more likely to be traditional, or she could be forced into a method not suitable for her (29). In other words, pregnant women may not be able to choose their delivery method. "For decision making", the family physicians and nurses/midwives should be involved as well as the couples (30).

In our study, the results concerning miscarriage and condom usage are interesting: the only significant difference was that miscarriage scores were higher among the users of condom than the non-users of contraceptive methods ( $p = 0.002$ ). This raises a new research question; why miscarriages are more correlated with the usage of condoms than without any methods. Another research question is whether the couples are using this method properly. Self-induced abortion was significantly higher among the users of tubal ligation than the condom users ( $p = 0.004$ ), and the non-users of contraceptive methods ( $p < 0.001$ ). This shows that women and/or their physicians found an irreversible solution for this problem by choosing tubal ligation.

No couples used vasectomy as a contraceptive method, while tubal ligation was one of the most used. All over the world, vasectomy as a contraceptive method is less chosen than tubal ligation (31).

## CONCLUSION

Every minute, 380 women worldwide become pregnant, and of these, half of them face unwanted or unplanned pregnancies, and suffer complications, have miscarriages, and dies. Differential failure risk due to ethnicity and socioeconomic factors could underlie this phenomenon. The Astana declaration recommends "health for all", and the need to reduce risks through family planning, improved sexual health counseling and education about contraception. Well-structured education programs are needed, not only for individuals and the general population, but also for healthcare workers.

The sociodemographic structure has changed due to the increased refugee population, migration, and globalization; therefore, sexual education of adolescents should be considered from this perspective.

All people have the right to access quality reproductive health services. Providing counseling on the contraceptive methods is among the duties of family physicians. To achieve this goal, primary care needs to take a patient-centered, people-oriented holistic approach with continuity of care.

One of the social determinants of health is the rate of the deaths of mother and newborn. Planned pregnancy with well-structured care is essential to achieve this goal. Appropriate contraceptive methods are also important points to women's health. As the family physicians are the gatekeepers, the discipline also includes "comprehensiveness, prevention, treatment and rehabilitation, and bio-psycho-social dimensions". Nevertheless, the care of family physicians in the follow-up of fertile women remains as the key-point.

### Strengths

One of the strengths of the study was that the data were collected from primary care records. For this reason, the analysis of the data we obtained revealed the knowledge and attitudes of people who should receive services in the area of birth control methods. Based on these results, it provides foresight to provide the necessary information on this subject. In this regard, it has been stated which efforts should be made to reach the desired level of health.

### Limitations

It is a limitation that the study is conducted only on patients' records who apply to a primary care facility. For this reason, the situation of those who do not apply to any health institution is unknown. For this, community-based household studies should be conducted. Although family physicians need to know all the characteristics of the registered population, today it is not possible to record these data in a healthy way since the number of registered patients per physician is high. Also, it is difficult for every physician to devote time to special topics and counseling.

It is important to find out to what effect women have access to methods that can be applied in terms of family planning. In addition, revealing women's thoughts on family planning through qualitative research can also make an important contribution. The lack of these qualitative data in our study is one of the limitations.

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**Informed Consent:** Written consent was obtained from the participants.

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