





Research Article

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EVALUATION OF PREGNANT AND POSTPARTUM WOMEN'S PERSPECTIVES ON FAMILY PLANNING METHODS

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Abstract

Objectives: This study aimed to assess family planning (FP) method preferences in pregnant and postpartum women, identify influencing factors, and emphasize the role of family medicine in FP counseling.

Materials and Methods: This cross-sectional study included 206 pregnant women in Antenatal Clinics and 206 postpartum women from the Newborn Clinic in Ankara Bilkent City Hospital. Data collection used a 52-item questionnaire. Descriptive statistics were presented as numbers, percentages, means \pm standard deviations, and medians. Comparative statistics employed Kruskal-Wallis, Mann-Whitney U, and Chi-square tests, with $p < 0.05$ considered significant.

Results: Most participants had completed high school or university education. Most patients had a single pregnancy and were aware of at least one modern FP method. Many patients with multiple pregnancies had an interpregnancy interval of < 2 years. Approximately 21.2% of patients experienced unplanned pregnancies, mainly despite contraception, often using withdrawal. A total of 66.7% knew about FP counseling in family medicine. As education levels increased, total pregnancies, unplanned pregnancies, and intervals of < 2 years decreased. A significant relationship existed between the total number of pregnancies and postpartum FP method choice. Age was also statistically related to the usage rate of the pre-pregnancy contraceptive method.

Conclusion: Awareness and use of modern FP methods in the community were below the desired level. Factors contributing to this include low education levels and a lack of awareness about obtaining FP counseling from family physicians. Family physicians, as providers of preventive services, play a crucial role in providing accurate information regarding FP during pregnancy and the postpartum period.

Keywords: Family medicine, family planning, pregnant, postpartum.

Introduction

Family planning (FP) encompasses practices that support individuals in achieving desired parenthood based on age, health, and economic conditions, ensuring planned pregnancies. It is a holistic concept addressing social, psychological, economic, and religious factors.¹⁻² FP services are essential to reproductive health, viewed as a societal issue encompassing basic human rights and health rights.³ The 2030 Sustainable Development Agenda incorporates specific goals related to reproductive health and FP, placing increased emphasis on sexual and reproductive health in national initiatives and programs.⁴

Thanks to FP, individuals can avoid untimely and unplanned pregnancies. According to data from the World Health Organization (WHO) in 2017, modern contraceptive methods prevented around 308 million unintended pregnancies.⁵ Furthermore, WHO reported that around 50% of yearly pregnancies are unintended, and 60% of these unintended pregnancies result in voluntary abortions, which constitutes about 30% of all pregnancies.⁶

FP reduces maternal and infant mortality by addressing fertility practices, such as early or late childbirth, excessive pregnancies, and short birth intervals. WHO research indicates that infants born with intervals under two years have a 45-60% higher mortality rate than those with intervals over two years.⁷ In a study based on 2001 data from the United Nations Development Program, the infant mortality rate was significantly higher for women giving birth in their 40s compared to those in their 20s and 30s.⁷

In the year 2020, it was estimated that approximately 1.9 billion women aged 15 to 49 (reproductive age) worldwide required family planning (FP) services.⁸ Out of these, the percentage of women using any FP method during the period between 2000 and 2020 increased from 47.7% to 49%.⁸ Additionally, the proportion of women using modern FP methods rose from 73.6% in 2000 to 76.8% in 2020, to reach 80% by 2030.

Among women who utilize family planning methods, 28% discontinue their use within the first year, largely because of their desire to become pregnant or experience pregnancy while using the method. Furthermore, 12% of married women do not employ any contraceptive methods, even though they intend to space or restrict the number of children they have. Over the past 30 years, there has been an increase in the use of modern methods from 31% to 49%, while the use of traditional methods has decreased from 32% to 21%.⁹

Successful implementation of family planning (FP) programs relies heavily on the provision of FP counseling services. Comprehensive FP counseling not only benefits couples but also has a broader impact on the community, improving reproductive health management. Moreover, individuals who receive counseling services are better informed when selecting an FP method that aligns with their sociocultural and obstetric characteristics.¹⁰⁻¹¹ Family medicine serves as the initial point of contact with the healthcare system, utilizing

a biopsychosocial approach to provide comprehensive health services in easily accessible community locations, regardless of individual factors such as gender, age, or illness, and offering continuous care.¹² As a trusted and accessible source for individuals seeking advice on medical matters, family medicine effectively provides accurate information about FP methods, preventing misuse.¹³

Materials and Methods

Sample

The sample size for the study was determined using G*Power Ver. 3.1.9.4 Software® (Germany) power analysis program. This study evaluated two groups, pregnant and postpartum, and involved 412 cases, with 206 cases in each group. The type 1 error (α) was set at 0.05, the effect size was 0.2, and the chi-squared test was used. The power of this study was 90%.

Data Collection

The study comprised 412 individuals, including 206 pregnant women from the Obstetrics Clinic and 206 postpartum women from the Neonatology Clinic of the X Hospital. These individuals were recruited between December 23, 2022, and January 31, 2023.

This was an observational, cross-sectional survey that utilized a form developed by the researcher. The survey consisted of three sections, with a total of 52 questions. The sections included questions regarding sociodemographic, obstetric, and FP characteristics. The survey was administered face-to-face voluntarily to participants who met the inclusion criteria.

Ethical Considerations

This study was approved by the Ethics Committee of Ankara Bilkent City Hospital on December 23, 2022.

Statistical Analysis

The Statistical Package for Social Sciences 23.0 (SPSS Inc., Chicago, USA) was used for statistical analysis of the research data. In the descriptive statistics section, categorical variables were presented as numbers and percentages, whereas numerical variables were presented as means \pm standard deviations. For the comparison of numerical data, the Student's t-test was used for two groups, and the One-way ANOVA test was used for comparisons involving three or more groups. Categorical variables were compared using the chi-squared test.

A post-hoc Bonferroni correction was applied for meaningful differences in comparisons other than 2×2 in categorical data. In this study, the significance level was set at $p < 0.05$.

Results

Sociodemographic Characteristics

This study includes 412 participants: 206 pregnant women (average age: 27.36 ± 5.06 years, marriage age: 22.52 ± 4.02 years, marriage duration: 4.88 ± 4.32 years) and 206 postpartum women (average age: 28.46 ± 5.07 years, marriage age: 22.87 ± 4.04 years, marriage duration: 5.60 ± 4.77 years). There were no significant differences between the groups in terms of age, age at marriage, or marriage duration (p values were < 0.05 , respectively).

The vast majority of the participants had graduated from high school (39.8% of pregnant women and 38.8% of postpartum women) or university (35.0% of pregnant women and 36.9% of postpartum women). Housewives comprised 72.3% of the pregnant women and 71.4% of the postpartum women. Additionally, 91.7% of the pregnant women and 87.9% of the postpartum women had health insurance (Table 1). The groups did not differ in terms of educational status, occupation, or health insurance (p values were < 0.05 , respectively).

Table 1. The Pregnant and Postpartum groups' characteristics on educational status, occupation, and health insurance

		Pregnant		Postpartum		X ²	P
		Number (n)	Percent (%)	Number (n)	Percent (%)		
Educational Status	Elementary School	11	5,3	17	8,3	3,61	0,46
	Middle School	41	19,9	33	16,0		
	High School	82	39,8	80	38,8		
	University	72	35,0	76	36,9		
Occupation	Housewife	149	72,3	147	71,4	0,04	0,82
	Employee	57	27,7	59	28,6		
Health Insurance	Exist	189	91,7	181	87,9	1,69	0,19
	Not Exist	17	8,3	25	12,1		

Obstetric Characteristics

A total of 44.2% of pregnant women and 42.2% of postpartum women had a single pregnancy. Moreover, 48.1% of the pregnant women had never given birth, while 50.5% of the postpartum women had one childbirth. In total, 53.4% of the pregnant women and 63.1% of the postpartum women used contraception before their first pregnancy. Among them, 52.7% of the pregnant women and 57.7% of the postpartum women chose modern contraceptive methods.

A total of 49.0% of the pregnant women had no living children, whereas 52.4% of the postpartum women had two or more children. Among the pregnant women, 24.5% had an age difference of less than 2 years between their last two children and 75.5% had an age difference of more than 2 years. Among postpartum women, 16.7% had an age difference of less than 2 years and 83.3% had an age difference of more than 2 years.

A total of 21.4% of pregnant women had a miscarriage and 18.0% had an abortion. Among postpartum women, 17.5% experienced a miscarriage, and 13.1% had an abortion.

In total, 23.8% of the pregnant women and 18.9% of the postpartum women reported unwanted pregnancies. Among them, 28.6% of the pregnant women and 33.3% of the postpartum women indicated that they did not use contraceptive methods. Among contraceptive users, 45.7% of the pregnant women and 42.3% of the postpartum women used modern methods. Regarding the outcomes of unwanted pregnancies, 35.7% of pregnant women had spontaneous miscarriages, 10.2% had induced abortions, and 55.1% had live births. Among the postpartum women, 20.5% had spontaneous miscarriages, 10.3% had induced abortions, and 69.2% had live births.

Of the pregnant women, 23.8% reported an unplanned current pregnancy and 24.8% of postpartum women mentioned that their last pregnancy was unplanned.

In total, 51.0% of the pregnant women and 48.1% of the postpartum women used contraception before pregnancy. Furthermore, 16.0% of pregnant women and 21.1% of postpartum women received FP counseling during pregnancy.

During pregnancy or the postpartum period, 23.3% of pregnant women and 28.6% of postpartum women did not consider receiving FP counseling. Among those considering FP counseling, the majority expressed the intention to receive it from healthcare professionals such as midwives or nurses.

Of the pregnant women, 4.9% reported unintended pregnancies and 19.4% expressed a desire for future pregnancies rather than at the current moment. In the postpartum group, 3.4% of women had unintended pregnancies, and 19.4% expressed a desire for future pregnancies.

The Pregnant and Postpartum groups did not differ in terms of obstetric characteristics (Table 2), without considering the total number of births and total number of living children (p values were 0.01).

Family Planning Characteristics

A total of 91.7% of pregnant women and 87.9% of postpartum women considered FP practice necessary. Moreover, 64.6% of pregnant women and 68.9% of postpartum women were aware that they could receive FP counseling from family physicians. The pregnancy and postpartum groups did not differ in terms of FP characteristics (Table 3).

Comparison Data

Among all participants, there was a significant correlation between their education level and the age difference between the last two children ($p=0.001$). Individuals who had completed middle school or a lower level of education tended to have a childbearing interval of less than two years between their last two children. Additionally, a statistically significant relationship was observed between the participants' educational level and total number of pregnancies ($p=0.001$). As the educational level increased, the likelihood of experiencing four or more pregnancies decreased. Furthermore, there was a significant association between the educational level of pregnant and postpartum women and the occurrence of unplanned pregnancies ($p=0.014$). As the educational level increased, the rate of unplanned pregnancies decreased (Table 4).

There was a significant correlation between the type of FP method that the participants planned to use after birth and total number of pregnancies ($p<0.001$). The majority of individuals who chose alternative family planning methods, such as tubal ligation, Implant/Norplant, or vasectomy, had four or more pregnancies. Conversely, those who did not use any family planning methods were mostly individuals who had only a single pregnancy (Table 5).

There was a significant correlation between participants' age and the use of the FP method before pregnancy ($p=0.023$). The rate of FP method use was lower in those aged ≤ 19 years (Table 6).

Table 2: The obstetric characteristics of the Pregnant and Postpartum groups

		Pregnant		Postpartum		X ²	p
		Number (n)	Percent (%)	Number (n)	Percent (%)		
Total Number of Pregnancies	1	91	44,2	87	42,2	2,85	0,41
	2	55	26,7	65	31,6		
	3	33	16,0	36	17,5		
	≥ 4	27	13,1	18	8,7		
Total Number of Births	0	99	48,1	-	-	128,41	0,01
	1	69	33,5	104	50,5		
	2	26	12,6	70	34,0		
	3	10	4,9	27	13,1		
	≥ 4	2	1,0	5	2,4		
Contraceptive Use Until the First Pregnancy		110	53,4	130	63,1	3,99	0,46
Contraceptive Method	Modern Methods	58	52,7	75	57,7	0,59	0,44
	Traditional Methods	52	47,3	55	42,3		
Number of Living Children	0	101	49,0	-	-	130,38	0,01
	1	72	35,0	98	47,6		
	≥ 2	33	16,0	108	52,4		
Age Difference Between the Last Two Children	≤ 2 years	23	24,5	18	16,7	1,89	0,16
	≥ 2 years	71	75,5	90	83,3		
Spontaneous Miscarriage (Abortion) Status		44	21,4	36	17,5	0,99	0,31
Induced Abortion (Termination) Status		37	18,0	27	13,1	1,85	0,17
Reason for Induced Abortion	Due to Personal Health Problems	2	5,3	-	-	2,17	0,53
	Due to Health Issues of The Fetus/Embryo	20	52,6	17	63,0		
	Unintended Pregnancy	3	7,9	1	3,7		
	Other	0	34,2	9	33,3		
Unintended Pregnancy Status		49	23,8	39	18,9	1,23	0,26
Unintended Pregnancy Status While Using Contraception		35	71,4	26	66,7	0,04	0,95
Contraceptive Method	Modern Methods	16	45,7	11	42,3	0,07	0,79
	Traditional Methods	19	54,3	15	57,7		
Result of Pregnancy	Spontaneous Miscarriage (Abortion)	17	34,7	8	20,5	2,24	0,32
	Induced Abortion (Termination) Status	5	10,2	4	10,3		
	Birth	27	55,1	27	69,2		
Planned Nature of The Current/Latest Pregnancy		157	76,2	155	75,2	0,05	0,81
Use of Contraceptive Method Before Becoming Pregnant		105	51,0	99	48,1	0,24	0,62
Receiving Family Planning Counseling During Pregnancy		33	16,0	36	21,1	1,58	0,20
Postpartum Family Planning Counseling Resource	Healthcare Worker (Midwife, Nurse)	68	33,0	61	29,6	4,51	0,34
	Obstetrician and Gynecologist	24	11,7	20	9,7		
	Family Physician	54	26,2	46	22,3		
	Other (Media, Book, Brochure)	12	5,8	20	9,7		
	Not Contemplating Counseling	48	23,3	59	28,6		
Planning Status of The Last Pregnancy	Become Pregnant Despite Not Wanting More Children	10	4,9	7	3,4	0,55	0,75
	Wanting Pregnancy at a Later Time	40	19,4	40	19,4		
	Those Who Believe Their Pregnancy Happened at The Right Time	156	75,7	159	77,2		

Table 3. The family planning characteristics of the Pregnant and Postpartum groups

	Pregnant		Postpartum		X ²	p
	Number (n)	Percent (%)	Number (n)	Percent (%)		
Family Planning requirements according to Pregnancy/Postpartum	189	91,7	181	87,9	1,69	0,25
Awareness of the possibility to receive Family Planning counseling from family medicine	133	64,6	142	68,9	0,88	0,40

Table 4. Participants' age difference between their last two children, the total number of pregnancies, and the occurrence of unplanned pregnancies according to educational levels

		Educational Status			
		Elementary and Middle School n (%)	High School n (%)	University n (%)	Total n (%)
Age Difference Between the Last Two Children	≤ 2 years	22 (53,7)	9 (22,0)	10 (24,4)	41 (100)
	≥ 2 years	44 (27,3)	68 (42,2)	49 (30,4)	161 (100)
	Single Pregnancy	36 (17,1)	85 (40,5)	89 (42,4)	210 (100)
Unintended Pregnancy Status	Exist	32 (36,8)	28 (32,2)	27 (31,0)	87 (100)
	Not Exist	70 (21,6)	134 (41,4)	120 (37,0)	324 (100)
Total Number of Pregnancies	1	28 (15,7)	72 (40,4)	78 (43,8)	178 (100)
	2	24 (20,0)	50 (41,7)	46 (38,3)	120 (100)
	3	25 (36,2)	29 (42,0)	15 (21,7)	69 (100)
	≥ 4	25 (55,6)	11 (24,4)	9 (20,0)	45 (100)

Table 5. The relationship between the total number of pregnancies and the type of Family Planning method that the participants planned to use after birth

		Type of Family Planning Method						Total n (%)
		Pill n (%)	IUD n (%)	Preservative n (%)	Withdrawal n (%)	Other n (%)	Not considering use n (%)	
Total Number of Pregnancies	1	12 (6,7)	26 (14,6)	65 (36,5)	25 (14,0)	9 (5,1)	41 (23,0)	178 (100)
	2	11 (9,2)	38 (31,7)	31 (25,8)	22 (18,3)	4 (3,3)	14 (11,7)	120 (100)
	3	5 (7,2)	23 (33,3)	24 (34,8)	8 (11,6)	6 (8,7)	3 (4,3)	69 (100)
	≥ 4	3 (6,7)	11 (24,4)	12 (26,7)	8 (17,8)	8 (17,8)	3 (6,7)	45 (100)

*IUD: Intrauterine device.

Table 6. Participants' age and the use of the Family Planning method before pregnancy

		The use of the Family Planning method		
		Exist n (%)	Not Exist n (%)	Total n (%)
Age range (years)	18-19	2 (20,0)	8 (80,0)	10 (100)
	20-24	43 (40,6)	63 (59,4)	106 (100)
	25-29	80 (51,9)	74 (48,1)	154 (100)
	30-34	55 (59,8)	37 (40,2)	92 (100)
	≥ 35	23 (46,0)	27 (54,0)	50 (100)

Discussion

FP counseling is crucial for individuals to adopt appropriate fertility behaviors. While women can receive FP counseling at any stage of their reproductive years, it is particularly effective during pregnancy and the postpartum period. During these times, women typically have fewer concerns about birth control, and frequent check-ups offer more opportunities for consistent communication with healthcare providers. Thus, the pregnancy and postpartum periods are optimal times for women to make informed decisions about contraception.¹⁴

The average age of pregnant women in the study was 27.36 years (SD = 5.06), while postpartum women had an average age of 28.46 years (SD = 5.07). This aligns with findings from a study by Eryilmaz et al., where postpartum women had an average age of 26.30 years (SD = 5.60), similar to our results.¹⁵ In the present study, educational attainment varied: 24.8% completed middle school or below, 39.3% completed high school, and 35.9% graduated from university. A study by Tuğal in Ankara found different levels of FP awareness: 67.6% completed primary school, 15% completed high school, and 13.3% graduated from university.¹⁶ The findings from these studies diverge from ours, likely due to sample-related factors. In our study, 71.8% of participating women were housewives, and 89.8% had health insurance. In Tuğal's report, 85.5% of participants were housewives.¹⁶ According to the Turkey Demographic and Health Survey 2018 (TDHS 2018), 90.3% of women aged 15-49 years had health insurance, which is consistent with our research.⁹ Education levels, occupations, and health insurance coverage not only impact general health behaviors like healthcare institution visits but also influence reproductive health behaviors, including family planning method choices.⁹

In this study, approximately 42% of participants reported no contraceptive use before their first pregnancy, and 10% had less than a two-year interval between their last two children. Among women with multiple pregnancies, 20.2% had less than a two-year interval between their last two children. These findings are consistent with the TDHS 2018 report, which indicates that 21% of births in Turkey occur within a very short birth interval of less than 24 months.⁹ Birth intervals significantly affect maternal and child health. Infants born within intervals of less than two years are 45% more likely to die than those born with a 2-3 year interval and 60% more likely to die than those born with an interval of 4 years or more.⁷ Considering these risks, it's vital to offer critical information about the potential hazards of short birth intervals during counseling sessions for all women of reproductive age and to enhance awareness about this issue.

In our study, 80.6% of participants reported no history of miscarriage, while 84.5% stated they had never had an abortion. Among those who had abortions, 6.2% cited it as the reason for an unwanted pregnancy. Additionally, 21.2% reported unintended pregnancies, with 66.3% becoming pregnant despite contraceptive use. The rate of elective abortions in our study aligns with the Sexual Health and Reproductive Health Services

Research Report.¹⁷ In Tuğal's report, 33.5% of participants experienced unwanted pregnancies, with 72.4% using contraceptives before conception. Among these unintended pregnancies, 81% resulted in live births.¹⁶ Unintended pregnancies, leading to both voluntary and unsafe abortions, present a substantial risk to the health and well-being of reproductive-aged women. Factors such as limited access to contraceptives, incorrect or inconsistent usage, and non-utilization contribute to high rates of unintended pregnancies. Ensuring correct, proper, and effective use of family planning methods is critical for decreasing unwanted pregnancies and subsequently reducing abortion rates. The significance of research in these domains is apparent, given the intricate interplay of these factors.

Our research revealed that a notable portion of women experiencing unintended pregnancies despite contraceptive use relied on the withdrawal method. A comparable study conducted at a maternity center in Manisa found that the withdrawal method, with a prevalence of 38.1%, was the most frequently used among women facing unintended pregnancies.¹⁸ Although the withdrawal method is widely recognized and practiced, its reliance on male cooperation can lead to incorrect use. The effectiveness of the withdrawal method is approximately 96% when used correctly, but drops to approximately 73% when used incorrectly.¹⁹ It is crucial for individuals to choose this method to receive accurate information on its proper application. In cases of difficulty, options for modern contraceptive methods should be suggested as alternatives.

Our study found that the intention to use postpartum family planning methods among pregnant and postpartum women correlated with their total number of pregnancies, births, and living children. Those without children mostly did not consider using any method and had the lowest intrauterine device (IUD) usage rate. Conversely, women with three or more children often preferred tubal ligation, implants, or vasectomy. Previously, Kutlu et al. discovered a higher frequency of using modern methods in the group with parity and living child numbers ranging from 1 to 2.²⁰ Similarly, the TDHS 2018 found that FP method usage increases with the number of living children, consistent with our study's outcomes.⁹ This could be due to individuals reaching their desired ideal number of children. Those with fewer living children had lower demands for FP methods.

In the present study, the participants' age was significantly correlated with contraceptive method use. The rate of contraceptive use was lower in the age group of less than 24 years than in other age groups. Similarly, in Kutlu, et al.'s study, the rate of non-use of contraceptives among women aged 15-19 and 45-49 was higher than other age groups.²⁰ On the other hand, there was a statistically significant relationship between participants' educational levels and the age difference between their last two children. Those with elementary school or lower education had a shorter time than the last two children. According to TDHS 2018, the average birth interval was 34 months for women with no education or incomplete primary education, and 51 months for those with high school and above.⁹ In another study, Yavuz found that the rate of short birth intervals was

highest among the literate (53.3%) and lowest among college graduates (13.8%).²¹ Our results were similar to those of previous studies.

A statistically significant relationship was discovered between the participants' educational level and the age interval between their last two children. The average birth interval was 34 months for women with no education or incomplete primary education, and 51 months for those with high school and above. Yavuz's study also found that the rate of short birth intervals was highest among literate (53.3%) and lowest among college graduates (13.8%). Our findings are consistent with those of the previous studies.

There was a statistically significant relationship between the educational level of the pregnant and postpartum women and the total number of pregnancies. As the level of education increased, the rate of those with four or more pregnancies decreased. According to TDHS 2018 data, the fertility rate for women with primary school education is 3.6 per thousand for three years, while for those with high school and above education, this rate is 1.89.⁹ In a previous study, Gökseven et al. found that the level of education increases, the number of pregnancies decreases, which is consistent with our results.²

The relationship between the educational attainment of pregnant and postpartum women and the occurrence of unintended pregnancies was found to be statistically significant. As education levels increased, the incidence of unintended pregnancies decreased. According to the TDHS 2018 data, women aged 15-49 with high school education or higher had a smaller difference between their actual fertility rate and desired fertility rate than those with lower levels of education.⁹ In Yavuz's study, 51.2% of illiterate women reported unintended pregnancies, compared to 24.4% of university graduates.²¹ In a previous report, Kitapçioğlu et al. showed that the rate of intended pregnancies increased significantly as participants' education levels increased, similar to our findings.¹⁸ Education not only influences individuals' awareness of society and development but also affects their fertility characteristics and preferences. Therefore, promoting family planning counseling among individuals with lower levels of education is crucial.

Ethical Considerations: Ethical approval was obtained from the Ankara Bilkent City Hospital Ethics Committee.

Conflict of Interest: The authors declare no conflict of interest.

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