

## Pandemi Sürecinde, Üreme Çağındaki Kadınlarda Aile Planlaması Tutumu ile COVID-19 Korkusu ve Algılanan COVID-19 Riski Arasındaki İlişki

### The Relationship Between Family Planning Attitude and, Fear of COVID-19 and Perceived Risk of COVID-19 among in Women of Reproductive Age During the Pandemic Process

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#### ÖZ

**Amaç:** Pandemi sürecinde küresel olarak aile planlaması hizmetlerinin sürdürülmesinde ve bu hizmetlere erişimde aksaklıklar meydana gelmiştir. Bu çalışmanın amacı, pandemi sürecinde üreme çağındaki kadınlarda aile planlaması tutumu ile COVID-19 korkusu ve algılanan COVID-19 riski arasındaki ilişkinin incelenmesidir.

**Yöntem:** Kesitsel tipte olan bu çalışma, 01-14 Aralık 2021 tarihleri arasında bir eğitim ve araştırma hastanesinde 423 kadın ile yüz yüze uygulandı. Veriler “Kişisel Bilgi Formu, Aile Planlamasına Yönelik Tutum Ölçeği, COVID-19 Korkusu Ölçeği ve Algılanan COVID-19 Riski Ölçeği” ile toplandı.

**Bulgular:** Katılımcıların yaş ortalaması 36.75±7.56’dır. Pandemi döneminde, katılımcıların %5.4’ü plansız gebelik ve %5.7’si düşük deneyimlediğini belirtti. Katılımcıların Aile Planlama Yöntemlerine İlişkin Tutumlar alt ölçek toplam puanı ile COVID-19 Korkusu Ölçeği toplam puanı arasında istatistiksel açıdan anlamlı negatif yönde ve zayıf bir korelasyon olduğu bulundu (r=-0.143; p=0.003). Aile Planlamasına Yönelik Tutum Ölçeği toplam puanı ile Algılanan COVID-19 Riski Ölçeği Duygusal alt ölçeği puanları arasında istatistiksel açıdan anlamlı negatif yönde ve zayıf bir korelasyon olduğu saptandı (r=-0.131; p=0.007).

**Sonuç:** Çalışma sonucunda, pandemi sürecinde kadınların istenmeyen gebelik ve düşük deneyimlediği, bu dönemde en sık kullanılan yöntemin geri çekme olduğu dikkate alındığında, pandemi sürecinde karşılanmamış aile planlaması gereksiniminin olduğu düşünülmektedir.

**Anahtar Kelimeler:** Aile Planlaması, COVID-19, Korku, Risk, Kadın Sağlığı.

#### ABSTRACT

**Objective:** There were interruptions in the maintenance and access to family planning services globally during the pandemic. The aim of this study was to evaluate the relationship between the Family Planning attitude and the fear and the perceived risk of COVID-19 in women of reproductive age during the pandemic process.

**Methods:** This cross-sectional study was conducted face-to-face with 423 women in a training and research hospital between 01 and 14 December 2021. Data was collected with “Personal Information Form, Attitude towards Family Planning Scale, Fear COVID-19 Scale and COVID-19 Perceived Risk Scale”.

**Results:** The mean age of the participants was 36.75±7.56. During the pandemic period, 5.4% of the participants stated that they had experienced unplanned pregnancy and 5.7% experienced miscarriage. There was found a statistically significant negative and weak correlation (r=-0.143; p=0.003) between the Participants' Attitudes Towards Family Planning Methods subscale total score and the Fear COVID-19 Scale total score. It was detected that a statistically significant negative correlation between the total score of the Attitudes Towards Family Planning Scale total score and the COVID-19 Perceived Risk Scale Emotional subscale total score (r=-0.131; p=0.007).

**Conclusion:** As a result of the study, it is thought that there is an unmet need for family planning during the pandemic process, considering that women experience unwanted pregnancy and miscarriage during the pandemic process, and coitus interruptus is the most frequently used in this period.

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**Key words:** Family Planning, COVID-19, Fear, Risk, Women Health.

## 1. INTRODUCTION

Unintended pregnancies are an important and priority public health concern due to their negative effects on maternal and fetal health all around the world for decades. Family Planning (FP) as is a critical key to protect and promote women's health by reducing unintended pregnancies (1–3). Abortions due to the unmet needs for FP are in the leading cause among the causes of maternal and infant mortality (2). The use of modern FP methods is one of the main protective factors affecting the prevention of unintended pregnancies and the reduction of induced abortion rates (4,5). Although FP services was provided as a primary health care service all over the world and in our country, there were 270 million unmet modern FP needs was reported in 2020. According to the World Health Organization's (WHO's) 2020 report, the prevalence of modern FP usage among married women of reproductive age was 57.1% worldwide (6). In the low- and middle-income countries, 74 million women experience unintended pregnancies each year, of which 25 million results in unsafe abortions and 47.000 maternal deaths were reported in 2019 (7). The prevalence of using modern FP methods by married women of reproductive age in Türkiye was reported as 49% and, the unmet FP rate was 11.5% in 2018 data. It was reported that 15% of married women in Türkiye had induced abortion at least once and 60% of these women did not use a FP method before the abortion (8). The problems in accessing modern FP methods, failure to use methods, lack of knowledge on Sexual and Reproductive Health (SRH), and traditional attitudes, behaviors, and beliefs are listed as the obstacle factors for generalizing and effective application of FP services in the literature (9).

Prenatal care, FP counseling, access to FP materials, and other SRH services which were the component of routine women health services, were adversely affected around the worldwide during the COVID-19 pandemic (10). Individual, family and society's health will be affected for decades due to suspension, interruption or postponement of FP and SRH services during the pandemic period is considering. During pandemic periods, FP and SRH services should be maintained effectively to minimize this negative impact on individual, family, and society's health (11,12). One of the most important determinants of an individual's health-protective behavior is the perceived risk level for the situation in question (13). There is a relationship between individuals' perceived risk of COVID-19 infection and their protective behaviors such as following social distance and personal hygiene rules and using personal protective equipment (14,15). In addition, it is reported that couples' access to FP and SRH services is restricted due to the partial closure and lockdown during the pandemic process and the fear of transmission of the COVID-19 virus from the community and health personnel during access to health institutions (10,16). According to WHO data, 44% of countries experienced disruptions in FP services, 28% in safe abortion and post-abortion services, and a 10% decrease in the usage of FP methods is reported during the COVID-19 pandemic (17). It is assumed that these rates will cause 49 million women unmet need for modern FP methods and cause over 15 million unintended pregnancies globally because of pandemic conditions (18). Further, there is a 10% decrease in the essential health services and reproductive care, and maternal and neonatal health care delivery, which may result in 3.3 million unsafe abortions and 29,000 additional maternal

mortalities (19). Therefore, unmet need for FP methods may cause millions of additional unintended pregnancies, millions of unsafe abortions, and ultimately thousands of maternal mortality, has been evaluated during the pandemic (19). Interruption of FP and SRH services is indicated as an important public health problem during the pandemic. To protect women's health, meeting every need of the FP and SRH during the pandemic is among the priority interventions (20). Globally, there are changes in the reproductive preferences of individuals' and their attitudes toward the FP methods during the COVID-19 pandemic (21–23). There is a need to determine the impact of the COVID-19 pandemic on the FP attitudes and behaviors of society, is reported (24). There is no study in the literature examining the relationship between the FP attitude, the fear of COVID-19, and the perceived risk of COVID-19. The aim of this study was to evaluate the relationship between the Family Planning attitudes and the fear and the perceived risk of COVID-19 in women of reproductive age during the pandemic process.

#### Hypotheses of the Study

H1-a: There is a correlation between FP attitudes and fear of COVID-19 among women of reproductive age.

H1-b: There is a correlation between FP attitudes and the perceived risk of COVID-19 among women of reproductive age.

## 2. MATERIALS AND METHODS

### Study Design and Participants

This cross-sectional study was conducted between 01 and 14 December 2021 in the gynecology outpatient clinic of a training and research hospital in Ankara. The universe of the study was approximately 3.000 women who received health service in a year at the center where the research was conducted. The sample size of the study was 423 women. It was reported that the mean score of the Family Planning Attitude Scale (FPAS) as "137.53±27.11" in a study that was conducted in Turkiye during the pandemic period (22). The sample size was calculated as 384 participants with the effect size=0.18, 95% power and 0.05 error level in the current study, within the assumption that the total FPAS score of participants would be "5 points" different from the reference study's score (22). The G\*Power version 3.1.9.2 program was used for the sample size calculating. Considering the possible data loss, 10% of the reserve participants were added to the study sample. The inclusion criteria of the study were: being women 18-49 aged, being married, sexually active, volunteered to participate to the study, signed the consent form. The exclusion criteria of the study were: being pregnant, being in postpartum period, being infertile, menopausal period, having a written-verbal communication barrier and, being health personnel.

### Data Collection Form

Data collection form included Personal Information Form, FPAS, Fear COVID-19 Scale (FCS) and COVID-19 Perceived Risk Scale (CPRS).

### Personal Information Form

The Personal Information Form based on the literature was created by researchers (14,25,26). The personal information form included the socio-demographic characteristics of

the participants (10 questions), their history of COVID-19 (5 questions), and their reproductive health history (20 questions).

### **Family Planning Attitude Scale**

The FPAS was used to determine the FP attitudes of the participants. The FPAS was developed as a 5-point Likert type scale by Örsal and Kubilay (2007). The scale consists of three subscales and 34 items (25). The cut-off point of the scale is 119. The women with a mean score of the FPAS are greater than 119 considered more likely to use effective contraception (27). The FPAS Cronbach's  $\alpha$  value had been reported as 0.90 in the original study and was calculated as 0.85 in the current study (25).

### **Fear COVID-19 Scale**

The FCS was developed by Ahorsu et al. (2020). The Turkish validity and reliability of the FCS was tested by Satici et al. (2020). The FCS was used to evaluate the anxiety and fear of participant's about COVID-19 (26,28). The one-dimensional and 7-item scale is in the 5-point Likert type. The cut-off point of the FCS is reported as 16.5 (29). The scores above the cut-off point indicate the highest levels of the fear of COVID-19 (30). The FCS Cronbach's  $\alpha$  value had been reported as 0.84 in the original study and was calculated as 0.87 in this study.

### **COVID-19 Perceived Risk Scale**

The "SARS Risk Perception Scale" was developed by Brug et al. (2004), and adapted to COVID-19 as a valid and reliable scale by Yıldırım and Güler (2020) and the new scale was named as CPRS (14,31). The CPRS consists of two sub-dimensions and 8 items in a 5-point Likert type and the high scores indicate that a high level of the perceived risk of COVID-19. The Cronbach's  $\alpha$  value for the cognitive dimension was in range 0.72 to 0.73 and, for the emotional dimension was in range 0.87 to 0.88 were reported in the original study (14). The Cronbach's  $\alpha$  value of the cognitive dimension was calculated as 0.70 and, the Cronbach's  $\alpha$  value of the emotional dimension was calculated as 0.88 in this study.

### **Data Collection**

Women who came to the outpatient clinic for any reason and met the inclusion criteria were informed of the aim of the study and invited to participate the study. The data of the study were collected with the data collection form under the observation of researcher. The data collection form was applied to participants in a quiet room where privacy provided. While collecting data, the researcher used a mask and provided social distance in accordance with the pandemic conditions.

### **Data Analysis**

The data of the study were shown as numbers and percentages for the variables determined by counting, and as mean $\pm$ standard deviation for the variables determined by measurements. The normal distribution characteristic of the sample was examined by Kolmogorov Smirnov test. Mann Whitney U test and Kruskal Wallis test were used for comparative statistics, since the data did not show normal distribution. Spearman correlation analysis was performed to examine the relationships between the scores of the three scales used

in the study. Statistical Package for Social Sciences (SPSS) for Windows, ver. 20.0. software program was used for statistical analysis of the data. The statistical significance value was accepted as  $p < 0.05$ .

### 3. RESULTS

#### Characteristics of the Participants

**Table 1.** The Characteristics of the Participants.

Characteristics	n	%	
<b>Education level</b>	≤ 8 years	153	36.2
	> 8 years	270	63.8
<b>Working status</b>	Not Working	319	75.4
	Working	104	24.6
<b>Family structure</b>	Nuclear family	381	90.1
	Extended family	42	9.9
<b>Income status</b>	Income less than expenses	116	27.4
	Income equals expense	265	62.6
	Income more than expenses	42	9.9
<b>Type of marriage</b>	Traditionally arranged	166	39.2
	Convenience marriage	52	12.3
	Willingly marriage	205	48.5
<b>Having been diagnosed with COVID-19 during the pandemic period.</b>	Yes	176	41.6
	No	247	58.4
<b>During the pandemic, people (spouse/child/other) living together in the same house having been diagnosed with COVID-19.</b>	Yes	170	40.2
	No	253	59.8
<b>Losing a first degree (mother, father, sibling, child) relative due to COVID-19 during the pandemic period.</b>	Yes	14	3.3
	No	409	96.7
<b>Parity</b>	Nullipar	52	12.3
	Primiparous	50	11.8
	Multiparous	321	75.9
<b>Planning to get pregnant in the next six months during the pandemic</b>	Yes	55	13.0
	No	357	84.4
	I'm undecided	11	2.6
<b>The situation of experiencing at least one unplanned pregnancy during the pandemic period</b>	Yes	23	5.4
	No	400	94.6
<b>The state of experiencing a miscarriage at least once during the pandemic period</b>	Yes	24	5.7
	No	399	94.3
<b>Fear of getting pregnant during the pandemic</b>	No, I'm not afraid	361	85.3
	Yes, I am scared	46	10.9
	I'm undecided	16	3.8
<b>Preferred in case of an unplanned pregnancy during the pandemic</b>	I would give birth	340	80.4
	I would have an abortion	20	4.7
	I'm undecided	63	14.9
<b>Postpone to access to a health center on any issue related to women's health during the pandemic period</b>	Yes	122	28.8
	No	301	71.2
<b>Attending an education on contraceptive methods</b>	Yes	125	29.6
	No	298	70.4
<b>Using any contraceptive method in the past two months</b>	Yes	341	80.6
	No	82	19.4
<b>FP method status that you have used regularly in the last two months (n=341)</b>	Modern method	232	54.8
	Traditional method	109	25.8
	I don't use method	82	19.4

The mean age of the participants was  $36.75 \pm 7.56$  (min: 18, max: 49). The gravidity mean of the participants was  $2.43 \pm 1.47$  (min: 0, max: 10). The number of live births was found as  $1.95 \pm 1.08$  (min: 0, max: 5) and the number of medical abortions was determined as  $0.43 \pm 0.82$  (min: 0, max: 8), the number of induced abortions was determined as  $0.11 \pm 0.44$  (min: 0, max: 6). In the study, 63.8% of the participants had received education for more than eight years and, 48.5% expressed that had a willingly marriage (Table 1).

The mean score of FPAS was  $142.76 \pm 16.08$  and 8.3% of the participants scored below the FPAS cut-off point in the study. The mean score of FCS was  $18.45 \pm 6.84$  and 58.2% of the participants scored above the cut-off point. It was found that the mean score of CPRS was  $26.62 \pm 6.70$ . Characteristics of the participant's FPAS, FCS and CPRS scores is detailed in Table 2.

**Table 2.** The Characteristics of the Participants' FPAS, FCS and CPRS Scores.

Scales	Number of Items	Mean $\pm$ SD	Min.-Max.
<b>FPAS</b>			
Attitudes of society towards family planning	14	$61.46 \pm 6.59$	27-70
Attitudes towards family planning methods	12	$49.10 \pm 7.59$	23-60
Attitudes towards marriage and pregnancy	8	$32.20 \pm 5.80$	12-40
Total FPAS	34	$142.76 \pm 16.08$	74-170
<b>FPAS scores by cutoff point</b>			
$\leq 119$	n		%
$\leq 119$	35		8,3
$> 119$	388		91,7
Scales	Number of Items	Mean $\pm$ SD	Min.-Max.
<b>FCS</b>			
Total FCS	7	$18.45 \pm 6.84$	7-35
<b>FCS scores by cutoff point</b>			
$\leq 16,5$	n		%
$\leq 16,5$	177		41,8
$> 16,5$	246		58,2
Scales	Number of Items	Mean $\pm$ SD	Min.-Max.
<b>CPRS</b>			
Cognitive CPRS	4	$11.95 \pm 3.50$	4-20
Emotional CPRS	4	$14.74 \pm 4.68$	4-20
Total CPRS	8	$26.62 \pm 6.70$	8-40

FPAS = Family Planning Attitude Scale, FCS = Fear COVID-19 Scale, CPRS = COVID-19 Perceived Risk Scale, SD = Standard Deviation, Min.= Minimum value, Max.= Maximum value

### The Comparison of Some Characteristics of the Participants According to the FPAS', FCS' and, CPRS' Scores

The FPAS total scores of the participants who had eight years of education or less ( $136.50 \pm 16.44$ ) were lower than those who had more than eight years of education ( $146.31 \pm 14.76$ ) ( $z=6.079$ ;  $p=0.001$ ). In this study, the FPAS total scores of the participants who married willingly ( $145.78 \pm 16.14$ ) were higher than the other participants ( $z=17.232$ ;  $p=0.001$ ). It was found that the nulliparous participant's attitudes towards FP methods subscale scores ( $46.77 \pm 7.18$ ) were lower than the other participants ( $z=6.586$ ;  $p=0.037$ ). The total FPAS scores of the participants who received training on FP methods ( $145.39 \pm 15.08$ ) were higher than those who did not receive training ( $141.66 \pm 16.38$ ) ( $z=2.165$ ;  $p=0.030$ ). In this study, the FPAS total

scores of the participants who postponed going to the health institution for any subject during the pandemic period (145.32±15.78) were higher than those who did not postpone (141.63±16.10) (z=2.348; p=0.019). In the study, the FPAS total scores of the participants who did not plan pregnancy during the pandemic period (143.82±16.08) were higher than the other participants (z=13.887; p=0.001).

**Table 3.** The Comparison of Some Characteristics of the Participants According to the FPAS' and Subscale Scores.

Characteristics	Total FPAS			Attitudes of society towards family planning		
	Mean±SD	Test Statistics	p	Mean±SD	Test Statistics	p
<b>Education level</b>						
≤ 8 years	136.50±16.44	6,079	<b>0.001*</b>	59.10±7.18	5.653	<b>0.001*</b>
>8 years	146.31±14.76			62.82±5.84		
<b>Working status</b>						
Not Working	141.49±16.08	2.927	<b>0.003*</b>	60.85±6.46	4.244	<b>0.001*</b>
Working	146.68±15.50			63.39±6.67		
<b>Income status</b>						
Income less than expenses	140.75±16.52	7.576 <sup>a</sup>	<b>0.023*</b>	60.41±6.91	13.618 <sup>a</sup>	<b>0.001*</b>
Income equals expense	142.65±16.28			61.45±6.59		
Income more than expenses	149.02±11.72			64.60±4.56		
<b>Family structure</b>						
Nuclear family	143.32±15.86	2.082	<b>0.037*</b>	61.70±6.48	2.243	<b>0.025*</b>
Extended family	137.73±17.32			59.40±7.30		
<b>Type of marriage</b>						
Traditionally arranged	140.26±15.30	17.232 <sup>a</sup>	<b>0.001*</b>	60.36±6.29	21.246 <sup>a</sup>	<b>0.001*</b>
Convenience marriage	138.88±16.34			59.88±7.03		
Willingly marriage	145.78±16.14			62.79±6.50		
<b>Parity</b>						
Nullipar	139.35±16.81	3.627 <sup>a</sup>	0.163	61.35±6.85	0.659 <sup>a</sup>	0.719
Primiparous	145.32±16.32			62.10±6.57		
Multiparous	142.92±15.88			61.40±6.57		
<b>Attending an education on contraceptive methods</b>						
Yes	145.39±15.08	2.165 <sup>b</sup>	<b>0.030*</b>	61.93±5.74	0.444 <sup>b</sup>	0.657
No	141.66±16.38			61.29±6.92		
<b>Postpone to access to a health center on any issue related to women's health during the pandemic period</b>						
Yes	145.32±15.78	2.348 <sup>b</sup>	<b>0.019*</b>	62.22±6.64	1.905 <sup>b</sup>	0.057
No	141.63±16.10			61.15±6.56		
<b>Planning to get pregnant in the next six months during the pandemic</b>						
Yes	137.78±15.41	13.887 <sup>a</sup>	<b>0.001*</b>	60.78±6.78	1.523 <sup>a</sup>	0.467
No	143.82±16.08			61.60±6.62		
I'm undecided	133.36±12.29			60.73±4.92		
<b>Fear of getting pregnant during the pandemic</b>						
No, I'm not afraid	137.11±19.46	5.808 <sup>a</sup>	<b>0.05*</b>	59.17±7.65	6.312 <sup>a</sup>	<b>0.043*</b>
Yes, I am scared	143.48±15.63			61.78±6.47		
I'm undecided	142.88±12.75			61.19±5.10		
<b>Preferred in case of an unplanned pregnancy during the pandemic</b>						
I would give birth	141.60±16.28	13.315 <sup>a</sup>	<b>0.001*</b>	61.02±6.79	12.565 <sup>a</sup>	<b>0.002*</b>
I would have an abortion	152.40±14.03			65.30±5.14		
I'm undecided	146.02±14.21			62.73±5.38		

FPAS = Family Planning Attitude Scale, SD = Standard Deviation, a = Kruskal Wallis, b = Mann Whitney U, \*= p < 0.05

**Table 3.** The Comparison of Some Characteristics of the Participants According to the FPAS' and Subscale Scores (Continue).

Characteristics	Attitudes towards family planning methods			Attitudes towards marriage and pregnancy		
	Mean±SD	Test Statistics	P	Mean±SD	Test Statistics	P
<b>Using any contraceptive method in the past two months</b>						
Yes	144.42±15.77	4.543 <sup>b</sup>	<b>0.001*</b>	61.85±6.24	1.931 <sup>b</sup>	0.054
No	135.88±15.61			59.90±7.76		
<b>FP method status that you have used regularly in the last two months (n=341)</b>						
Modern method	145.63±15.40	2.102	<b>0.036*</b>	61.99±6.32	0.478	0.633
Traditional method	141.83±16.11			61.72±6.11		
<b>Education level</b>						
≤ 8 years	47.67±7.73	2.768	<b>0.006*</b>	29.73±5.87	6.527	<b>0.001*</b>
>8 years	49.90±7.40			33.59±5.28		
<b>Working status</b>						
Not Working	48.94±7.59	0.638	0.523	31.69±5.84	3.173	<b>0.002*</b>
Working	49.57±7.59			33.72±5.39		
<b>Income status</b>						
Income less than expenses	48.99±7.96	1.923 <sup>a</sup>	<b>0.382*</b>	31.35±5.51	5.208 <sup>a</sup>	0.074
Income equals expense	48.88±7.52			32.32±6.02		
Income more than expenses	50.74±6.84			33.69±4.80		
<b>Family structure</b>						
Nuclear family	49.19±7.41	0.380	0.704	32.42±5.76	2.533	<b>0.011*</b>
Extended family	48.21±9.12			30.12±5.73		
<b>Type of marriage</b>						
Traditionally arranged	48.76±7.30	6.130 <sup>a</sup>	<b>0.047*</b>	31.14±5.66	12.554 <sup>a</sup>	<b>0.002*</b>
Convenience marriage	47.31±7.24			31.7±5.83		
Willingly marriage	49.82±7.84			33.17±5.76		
<b>Parite</b>						
Nullipar	46.77±7.18	6.586 <sup>a</sup>	<b>0.037*</b>	31.23±6.44	4.343 <sup>a</sup>	0.114
Primipar	49.68±8.00			33.54±5.84		
Multipar	49.38±7.54			32.14±5.66		
<b>Attending an education on contraceptive methods</b>						
Yes	50.02±7.48	1.607 <sup>b</sup>	0.108	33.45±5.46	2.807 <sup>b</sup>	<b>0.005*</b>
No	48.71±7.61			31.66±5.86		
<b>Postpone to access to a health center on any issue related to women's health during the pandemic period</b>						
Yes	49.60±7.46	0.851 <sup>b</sup>	0.395	33.51±5.44	2.948 <sup>b</sup>	<b>0.003*</b>
No	48.88±7.65			31.61±5.86		
<b>Planning to get pregnant in the next six months during the pandemic</b>						
Yes	45.95±7.10	20.476 <sup>a</sup>	<b>0.001*</b>	31.05±6.17	5.814 <sup>a</sup>	<b>0.050*</b>
No	49.76±7.52			32.45±5.76		
I'm undecided	43.18±6.06			29.45±3.88		
<b>Fear of getting pregnant during the pandemic</b>						
No, I'm not afraid	45.83±8.37	8.722 <sup>a</sup>	<b>0.013*</b>	32.11±6.02	0.006 <sup>a</sup>	0.99
Yes, I am scared	49.51±7.43			32.19±5.81		
I'm undecided	49.19±6.10			32.50±5.34		
<b>Preferred in case of an unplanned pregnancy during the pandemic</b>						
I would give birth	48.72±7.60	7.017 <sup>a</sup>	<b>0.030*</b>	31.86±5.00	6.444 <sup>a</sup>	<b>0.040*</b>
I would have an abortion	52.80±6.76			34.30±4.49		
I'm undecided	49.97±7.54			33.32±5.39		
<b>Using any contraceptive method in the past two months</b>						
Yes	49.94±7.42	4.721 <sup>b</sup>	<b>0.001*</b>	32.62±5.80	3.272 <sup>b</sup>	<b>0.001*</b>
No	45.57±7.30			30.40±5.43		
<b>FP method status that you have used regularly in the last two months (n=341)</b>						
Modern method	50.46±7.092	1.751	0.080	33.19±5.62	2.799	<b>0.005*</b>
Traditional method	48.83±8.02			31.28±5.90		

FPAS = Family Planning Attitude Scale, SD = Standard Deviation, a = Kruskal Wallis, b = Mann Whitney U, \*= p < 0.05



The FPAS scores of the participants who stated that they were afraid of experiencing pregnancy during the pandemic period (137.11±19.46) were lower than the other participants (z=5.808; p=0.05). The FPAS total score (152.40±14.03) of the participants who expressed that they would prefer to have an abortion in case of pregnancy during the pandemic period was higher than the other participants (z=13.315; p=0.001). In addition, the FPAS total scores of the participants who use the modern FP method (145.63±15.40) were higher than the participants who use the traditional application (141.83±16.11) (z=2.102; p=0.036). Comparison of some characteristics of the participant's according to the FPAS' and sub-dimension's scores were detailed in Table 3.

There were not found a statistically significant difference between the sociodemographic characteristics, COVID-19 and pregnancy histories of the participants according to FCS total score and sub-dimensional scores (p>0.05).

The data on the comparison of the participant's COVID-19 history according to CPRS' and sub-dimension's scores are detailed in Table 4. There was no statistical difference between the socio-demographic characteristics and pregnancy histories of the participant's and their total CPRS and subscale scores (p>0.05). The participants who were diagnosed with COVID-19 during the pandemic period had a higher score of CPRS (27.40±7.16) than those who did not (z=2.086; p=0.037). Participants who had a relative diagnosed with COVID-19 and lived with he/she in the same house, had a higher CPRS total score (27.31±7.03) than those who did not (26.26±6.43) (z=1.954; p=0.051).

**Table 4.** The Comparison of the Participants' COVID-19 History to CPRS' and Subscale Scores.

Characteristics	Cognitive CPRS			Emotional CPRS			CPRS Toplam		
	Mean ±SD	Test Statistics	p	Mean ±SD	Test Statistics	p	Mean ±SD	Test Statistics	p
<b>Having been diagnosed with COVID-19 during the pandemic period.</b>									
Yes	12.45±3.51	2.533 <sup>a</sup>	<b>0.011<sup>*</sup></b>	14.96±4.78	1.027 <sup>a</sup>	0.304	27.40±7.16	2.086 <sup>a</sup>	<b>0.037<sup>*</sup></b>
No	11.70±3.47			14.63±4.63			26.32±6.43		
<b>During the pandemic, people (spouse/child/other) living together in the same house having been diagnosed with COVID-19.</b>									
Yes	12.33±3.79	2.111 <sup>a</sup>	<b>0.035<sup>*</sup></b>	14.98±4.82	1.371 <sup>a</sup>	0.170	27.31±7.03	1.954 <sup>a</sup>	<b>0.051<sup>*</sup></b>
No	11.69±3.28			14.57±4.58			26.26±6.43		
<b>Losing a first degree (mother, father, sibling, child) relative due to COVID-19 during the pandemic period.</b>									
Yes	13.71±4.58	2.280 <sup>a</sup>	<b>0.023<sup>*</sup></b>	15.50±4.83	0.759 <sup>a</sup>	0.448	29.21±9.01	1.963 <sup>a</sup>	<b>0.050<sup>*</sup></b>
No	11.89±3.45			14.71±4.67			26.60±6.60		

CPRS = COVID-19 Perceived Risk Scale, SD = Standard Deviation, a = Mann Whitney U, \* = p < 0.05

### The Relationship between the FPAS, FCS and CPRS Scores of the Participants

There were statistically significant positive and strong correlations between the FPAS total and subscale scores of the participants (p<0.05). In the study, there was no relationship between the FPAS total score and the FCS score (p>0.05), however a negative and very weak relationship was found between the attitudes towards FP methods subscale and the FCS (r=-0.143; p=0.003). According to the results, a negative and very weak correlation was found

between the FPAS total score and the CPRS total score ( $r=-0.104$ ;  $p=0.032$ ), and the Emotional CPRS score ( $r=-0.131$ ;  $p=0.007$ ). However, the attitudes towards FP methods subscale and the CPRS total score ( $r=-0.120$ ;  $p=0.014$ ) and the Emotional CPRS ( $r=-0.157$ ;  $p=0.001$ ) scores were negatively and very weakly correlated. The relationship between the FPAS, the FCS, and the CPRS scores of the participants is detailed in Table 5.

**Table 5.** The Correlation between the FPAS, FCS and CPRS scores of the Participants.

Spearman's rho		Attitudes of society towards family planning	Attitudes towards family planning methods	Attitudes towards marriage and pregnancy	Total FPAS
Attitudes towards family planning methods	r	0.483	-	-	-
	p	<b>0.001</b>	-	-	-
Attitudes towards marriage and pregnancy	r	0.508	0.358	-	-
	p	<b>0.001</b>	<b>0.001</b>	-	-
Total FPAS	r	0.796	0.813	0.754	-
	p	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	-
Total FCS	r	-0.085	-0.143	0.028	-0.086
	p	0.08	<b>0.003</b>	0.561	0.077
Cognitive CPRS	r	-0.022	-0.031	-0.015	-0.025
	p	0.659	0.525	0.758	0.606
Emotional CPRS	r	-0.071	-0.157	-0.082	-0.131
	p	0.147	<b>0.001</b>	0.093	<b>0.007</b>
Total CPRS	r	-0.067	-0.120	-0.064	-0.104
	p	0.172	<b>0.014</b>	0.190	<b>0.032</b>

r = Spearman Correlation, FPAS = Family Planning Attitude Scale, FCS = Fear COVID-19 Scale, CPRS = COVID-19 Perceived Risk Scale

#### 4. DISCUSSION

In this study, which was conducted to examine the relationship between the FP attitude, fear of COVID-19 and perceived risk of COVID-19 among women of reproductive age, the mean FPAS score of the participants was found above the mean score. Although the attitudes of the participants towards FP were positive and at a very high level, one out of every four participants (25.8%) preferred traditional methods for FP. In a study conducted by Muhtaroglu in Kırklareli in 2019, the mean FPAS score of the participants was reported as  $132.68 \pm 21.53$  (32). The mean score obtained was at a very high level compared to the literature in the study. It was thought that the differences between the place and time characteristics of the studies and the characteristics of the sample groups such as age and education level lead these outcomes. It was also evaluated that the participants' positive attitudes did not evolve into a behavioral change at the desired level.

The attitudes toward FP obtained from all education groups were high and positive, however, the participants who had received more than eight years of education had more positive attitudes than the others in the current study. Similar to this study, there were also

studies in the literature reporting that as the education level of women increased, their attitudes toward FP increased for Turkish population (33–35). Bekele et al. (2020), reported that there was no difference between attitudes towards FP according to education level of Ethiopian women (36). It was thought that the difference was derived from the different cultural characteristics of women.

In the study, the attitudes towards FP were high and positive among participants who were working than non-working. In the current study, the mean FPAS score was higher than the studies of Tezel et al. (2015) (33). Although the study of Tezel et al. was conducted in Ankara as this study, it is thought that the difference between the results of this two study was due to the date of the application.

This study revealed that the participants who had higher monthly income had a high level of positive attitudes toward FP than others. Contrary to this result, in the study of Ayaz and Efe (2009) was reported that the economic status of women did not affect attitudes toward FP in a low socio-economic area (37). Considering that more than half of the participants in this study were in the income-expenditure balance, it was thought that the varieties of the socio-economic levels in the samples of the studies led to this outcome.

This study revealed that the participants who were living in a nuclear family had a high level of positive FP attitudes than others. The relationship between family type and attitudes toward FP that obtained in this study was similar to the study of Tezel et al. (2015) and Eryilmaz et al. (2016) (33,38). In contrast, Gürel et al. (2018) reported that the disabled women who were living in extended families had more positive attitudes towards FP (39) on the other hand, Ayaz and Efe (2009) reported that family structure did not affect the women's attitudes toward FP (37). These differences might be originated that due to the fact that the physical and social needs of disabled women were featured from other women and, also socio-demographic characteristics of the studies populations.

The participants who received education on FP methods had higher attitudes toward FP in this study. Similar to this consequence, Ayaz and Efe (2009) reported that women who had knowledge about FP had a high level of attitudes toward FP (37) and Eryilmaz et al. (2016) noticed that women who received FP counseling in the postpartum period had higher levels of positive attitudes toward FP than other women (38). Health education about FP contributed to positive attitudes, was evaluated as a synthesis of these outcomes. In this context, it could be recommended to consider health education as an opportunity for desired behavioral change toward FP.

The participants who had postponed health services related to women's health during the pandemic had higher levels of positive attitudes toward FP in the study. On the other hand, postponed health services could lead to unwanted and permanent health problems (34). In our best knowledge there was no study found that examine this issue. The women who had positive attitudes toward FP might not need to receive urgent health services related to women's health during the pandemic, was thought.

The participants who 84.4% did not plan a pregnancy in the next six months, 5.4% experienced a pregnancy during the pandemic process and 5.7% induced abortion in the current study. It was also found that 10.9% of the participants are afraid of experiencing pregnancy during this period, if they had an unplanned pregnancy, 80.4% will give birth and 4.7% will voluntarily terminate this pregnancy with abortion in this study. Furthermore, the participants

who were afraid of getting pregnant had the lowest levels of attitudes toward FP in the study. Dal et al. (2020) reported that approximately three out of ten women are afraid of getting pregnant, and 7.9% of women may consider having an induced abortion if they became pregnant, in the western of Türkiye during the pandemic (22). Under this frightening conditions, these results revealed that there were unmet needs for FP during the pandemic process and women who had low levels of attitudes toward FP should be evaluated as high risk group.

In this study, the participants who used any type of FP method in the last two months during the pandemic process, and who used a modern FP method had a higher level of positive attitude toward FP compared to the others. Contrary to this study, Gozukara et al. (2015) reported that there was no difference between attitudes towards FP and status of using FP and/or modern FP method (35). Gozukara et al. (2015) studied with women who had disabilities. Similar to this study, Apay et al. (2010) reported that those who used any FP method or modern method had a higher attitude toward FP methods than those who do not use or traditional methods usage (34). By the time the habits of using the FP method might have contributed to the ensure of positive attitudes toward FP in women, was thought.

More than half of the participants (58.2%) were considered to have a high level of fear of COVID-19 in this study. Luo et al. (2021) reported that the fear of COVID-19 score was 18.57 in a systematic review and meta-analysis of 44 articles on the fear of COVID-19 (40). It was reported in the literature that women experience a higher level of fear of COVID-19 than men during the pandemic, and the level of fear of COVID-19 varies between 17 and 26 points worldwide (40,41). Although, this study was applied at the end of the second year of the pandemic when social restrictions were lifted, it was considered that the fear of COVID-19 among the participants was still widespread and high.

In the current study, the perceived risk of COVID-19 among the participants was above the mean score. The perceived risk perception of COVID-19 was higher among participants who experience the infection themselves and/or family members in the same house than others in the study. In the literature, the perceived risk of COVID-19, especially in risk groups as healthcare workers was above the mean score (42–44). There was a community-based study reported that the perceived risk of COVID-19 level was higher among United Kingdom citizens with a history of COVID-19 than other individuals in 2021 (45) and there was also a study reporting that there was no relationship between a getting COVID-19 infection and risk perception among Turkish nurses (46). This difference might be derived from the different risk groups characteristics, was thought.

In the current study, as the COVID-19 fear level of the participants' increased, the attitudes toward FP methods indicate that the score decreased and there were negative attitudes toward FP method usage. There was no study found that reported the relationship between fear of COVID-19 and attitudes toward FP method was found in the literature. As participant's perceived COVID-19 risk and emotional risk increased, their attitudes toward FP and family planning methods scores decreased. In our best knowledge there was no study found that examined the relationship between the perceived risk of COVID-19 and attitudes toward FP. These results were interpreted that the increased the fear of COVID-19 and perceived COVID-19 risk levels which were frequently experienced during the COVID-19 pandemic, had the potential to negatively effect attitudes toward FP. If the process is prolonged, these negative

attitudes might threaten women's health by increasing the possibility of causing undesirable behaviors.

### **Limitations**

The limitations of the study were that it was carried out in a single center, it was hospital-based, the pandemic was in its second year, it was carried out in metropolitan borders where the participants had easy access to health services, and the attitudes of the participants toward FP before the pandemic were not known.

## **5. CONCLUSION**

One of the main results of the study was that as the COVID-19 fear level of the participants increased, attitudes toward FP methods were negatively effected. Another result was that the perceived COVID-19 risk level of the participants increased and positive attitudes toward FP decreased. To create a positive attitude and behavior change toward FP methods in women, there is a need for widespread health education and consultancy services in this regard. In addition, it is recommended that these services be provided in the form of online and/or telehealth services during pandemic periods. However, it is recommended to conduct research on the relationship between women's FP attitude, fear of COVID-19, and perceived risk of COVID-19 according to different geographical regions and different sociodemographic characteristics of women.

### **Ethical Considerations**

The study was carried out in compliance with the principles of the Helsinki Declaration and an ethical approval was obtained from the Gulhane Scientific Research Ethics Committee of the University of Health Sciences (approval date and number: 25.11.2021/2021-384). The research application permission was obtained from the Medical Specialization Education Board, in official correspondence. Permissions to use the scales were obtained from the responsible authors of the scales' in the study with via e-mails. Participants written informed consent were obtained.

### **Conflict of Interest**

The authors have no conflicts of interest to.

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