




ARAŞTIRMA MAKALESİ/ORIGINAL ARTICLE

Factors Associated with Women's Contraceptive Use and Access to  
Contraceptive Methods During the COVID-19 Pandemic  
COVID-19 Pandemisinde Kadınların Kontraseptif Yöntem Kullanımı ve Kontraseptif  
Yöntemlere Erişimi ile İlişkili Faktörler

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**Abstract**

**Background:** Due to the pandemic, the use of contraceptive methods in women was restricted, and many of them even faced problems such as abortion and unplanned pregnancy because they could not access the contraceptive methods.

**Objective:** This study aimed to determine women's use of modern contraceptive methods during the COVID-19 pandemic and to examine the predictors of access to modern contraceptives.

**Method:** Women (n=502) aged 18-49, fertile and using any contraceptive methods were included in the study. Data were collected via an online survey. The use and access to contraceptives during the pandemic were analyzed with descriptive statistics. Multiple regression analysis, odds ratios (OR), and 95% confidence intervals were calculated to investigate contraception access difficulties and change predictors.

**Results:** The results of this study indicate that 64.9% of the participants were utilizing modern contraceptive methods, while 23.5% were concerned about obtaining contraceptives during the pandemic. Furthermore, 6% of the women experienced difficulty accessing contraceptives during this period, and 6.2% altered their contraceptive methods. The primary predictor of women's difficulty in accessing contraceptives during the pandemic was the absence of access to the method prior to the pandemic in a similar manner (OR:40.0 95%CI=12.3-129.9; p=.001). Additionally, It was also found that women who changed their methods during the pandemic had 4.47 times more difficulty in accessing the new method.

**Conclusion:** Having experienced an unintended pregnancy before the pandemic and fear of becoming pregnant during the pandemic were found to be important determinants of the contraceptive change. This study shows evidence that the pandemic has affected contraceptive access. In this regard, planning initiatives to increase access to contraception services is recommended.

**Keywords:** Covid-19, Contraception, Pandemic, Reproductive Health

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**Öz**

**Giriş:** Pandemi nedeniyle kadınlarda kontraseptif yöntem kullanımı kısıtlanmış, hatta birçoğu yöntemlere ulaşamadığı için düşük, plansız gebelik gibi sorunlarla karşı karşıya kalmıştır.

**Amaç:** Bu çalışmada COVID-19 pandemisinde kadınların modern kontraseptif yöntem kullanımını belirlemek ve yöntemlere erişiminin belirleyicilerini incelemek amaçlanmıştır.

**Yöntem:** Çalışmaya 18-49 yaş arası, fertil (n=502) ve herhangi bir kontraseptif yöntem kullanan kadınlar dahil edildi. Veriler çevrimiçi anket ile toplanmıştır. Pandemi döneminde kontrasepsif kullanımı ve erişim durumu tanımlayıcı istatistik ile analiz edilmiştir. Kontrasepsiyon erişim gücünü ve kontraseptif yöntem değişikliğinin yordayıcılarını araştırmak için çoklu regresyon analizi yapılarak, olasılık oranları ve %95 güven aralıkları hesaplanmıştır.

**Bulgular:** Bu çalışmaya katılan kadınların %64.9'unun pandemi sırasında modern kontraseptif yöntem kullandığı ve %23.5'inin kontraseptiflere erişim konusunda endişeli olduğu belirlendi. Kadınların %6'sı pandemi sırasında kontraseptif yöntem erişimde zorluk yaşadığını ve %6.2'si doğum kontrol yöntemlerini değiştirdiğini ifade etmiştir. Pandemi döneminde kadınların kontraseptiflere erişim gücünün en önemli belirleyicisi, pandemi öncesi dönemde de benzer şekilde yöntem erişememeleridir (OR:40.0 %95 CI=12.3-129.9; p=.001). Ayrıca pandemi sırasında yöntemlerini değiştiren kadınların yeni yöntem erişimde 4.47 kat daha fazla zorluk yaşadıkları tespit edildi.

**Sonuç:** Bu çalışmada, pandeminin kontraseptif yöntem erişimi etkilediğine dair kanıtlar bulunmuştur. Pandemi öncesi istenmeyen gebelik yaşamının ve pandemide gebe kalma korkusunun kontraseptif değişikliğinin önemli yordayıcıları olduğu belirlendi. Bu doğrultuda kontrasepsiyon hizmetlerine erişimin artırılmasına yönelik girişimlerin planlanması önerilmektedir.

**Anahtar Kelimeler:** Covid-19, Kontrasepsiyon, Pandemi, Üreme Sağlığı

**INTRODUCTION**

The COVID-19 pandemic, a global public health crisis, has caused significant mortality and morbidity rates and posed socio-economic difficulties (Sohrabi et al., 2019; UNDP, 2020; WHO, 2020). While governments take drastic measures in the early period to contain the spread of the virus, the health system and social systems struggle with increasing case burdens (Anderson et al., 2020). Some healthcare services have been disrupted, as healthcare is mostly shaped around the COVID-19 pandemic and treatment. Sexual and reproductive health services are also in danger of being restricted. It is thought that the pandemic will limit access to sexual and reproductive health services. The COVID-19 pandemic is expected to result in an increase in unplanned pregnancies, induced

abortions, maternal and neonatal deaths, as well as sexually transmitted diseases, and will also exert additional pressure on healthcare systems (IPFF, 2020; Tang et al., 2020; UNFPA, 2020a). This prediction is supported by the evidence, which indicates that the pandemic has affected pregnancy and contraceptive preferences, reduced access to contraceptive methods, and led to an increase in unplanned pregnancies (Wood et al., 2023; Rezai et al., 2023; Kocoglu et al., 2023; Szucs et al., 2023). Therefore, it is crucial to ensure access to sexual and reproductive health services during the pandemic (IPFF, 2020; Tang et al., 2020; UNFPA, 2020a). The World Health Organization (WHO) has also included reproductive health services, including pregnancy and childbirth, among the areas that should be given priority in the pandemic process (WHO, 2020). However, during the

pandemic, most healthcare institutions focused on COVID-19 diagnosis and treatment services and employed healthcare personnel in this field. Moreover, during this period, access to reproductive health services was restricted due to the decrease in the stock of contraceptive methods, the lack of active pharmaceutical ingredients required for the production of the method, or the problems experienced in the shipment (Purdy, 2020; UNFPA,2020) The International Planned Parenthood Federation (IPPF) reported that contraceptive and abortion services decreased due to the lack of active service in clinics and community health centers in many countries (IPPF, 2020). Lack of access to contraceptives used during the pandemic or inadequate counseling can result in women not accessing services and even discontinuing contraceptive use (UNFPA, 2020). Studies show that the decrease in short- and long-acting reversible contraceptives (LARCs) methods will increase the unmet need for contraceptives. This -will significantly increase unplanned pregnancies, unsafe abortions, and maternal deaths (UNFPA, 2020; Riley, Sully, Ahmed & Biddlecom, 2020). It is estimated that access to injectable contraceptive methods will be most negatively affected by the pandemic (UNFPA, 2020). For this reason, many guidelines recommend that women be informed about LARCs and self-administered contraceptive methods (WHO,2020; FIGO, 2020). It has also been emphasized that emergency contraception and abortion services should be accessible to prevent possible unplanned pregnancies after unprotected sexual intercourse (Asfaw et al.,2021). This study aimed to determine women's use of modern contraceptive methods during the COVID-19 pandemic and to examine the predictors of access to modern contraceptives.

## METHOD

### *Type of the Research*

This study used descriptive and correlational study design. The research questions of the study are as follows:

Have women had difficulty accessing contraceptive methods during the COVID-19 Pandemic?

Have women changed their contraceptive methods during the COVID-19 Pandemic?

What are the predictors of women's difficulty in accessing contraceptive methods during the COVID-19 Pandemic?

What are the predictors of women changing contraceptive methods during the COVID-19 pandemic?

### *Place of the Research*

The link to the online survey was shared on the researchers' social media accounts (Twitter®, Instagram®, Facebook®, Whatsapp®). First of all, the people who follow the social media accounts of the researchers and then the other participants were reached by using the snowball sampling method. Furthermore, to ensure the reliability of the data, measures were taken to prevent duplicate participation from the same account.

### *Universe/Sample of the Research*

The study population was composed of women between 18-49 years in Turkey. The sample size was calculated with the  $(n=t^2pq/d^2)$  formula and "2020 United Nations- World Contraceptive Use /Turkey" data with  $t = 1.96$ ,  $p = 0.70$  and  $q = 0.30$  at the confidence interval of 95%. It was determined that at least  $n = 323$  participants should be reached. The study was completed between June 2020 and September 2020. A total of 502 women met the sampling criteria and

completed the research questionnaire.

Inclusion criteria for the study can be listed as follows:

Being literate

Being between the ages of 18-49

Having a sexual partner

Being fertile

The exclusion criterion for this study is as follows:

Women with pregnancy intention

### ***Data Collection Instrument-Validity and reliability information***

In this study, data were collected using a questionnaire prepared by the researchers following the literature (UNFPA, 2020; WHO, 2020; Lindberg, VandeVusse, Mueller & Kirstein, 2020). The questionnaire included sociodemographic characteristics of women, such as age, educational status, economic status, employment status, and obstetric characteristics, such as the number of pregnancies, number of children, and history of unintended pregnancy. Additionally, the contraceptive method used before the COVID-19 pandemic, access to the method, and the utilization of contraception during the pandemic were assessed.

An expert panel was held for the validity of the data collection tool form and the questions were evaluated by five field experts in the research team. In line with the experts' feedback, minor adjustments were made to the questions and no questions were removed from the form.

### ***Data Analysis***

The data analysis was performed using the Statistical Package for the Social Sciences (SPSS) 25.0 package program. The Shapiro-Wilk test was used to evaluate the normal distribution of

the data. Participant characteristics were defined using descriptive statistics, percentages, means, and standard deviations (SD). To evaluate the relationship between variables, the "t test in independent groups" and the chi-square test were used. In addition, multivariate logistic regression analysis was performed to determine the predictors of difficulty in accessing the contraceptive method and method change. The predictive power of the model was evaluated using Nagelkerke R<sup>2</sup>. Statistically significant variables identified in the univariate analysis were entered into a multivariable logistic regression analysis. For the evaluation of statistical significance,  $p = 0.05$  was accepted.

### ***Variables of the Research***

Dependent Variables: Difficulty accessing contraceptive methods before and after the Covid-19 pandemic

Independent Variables: Sociodemographic characteristics of the participants (age, education level, economic status etc.)

### ***Ethical Aspect of the Research***

Ethical approval was obtained before starting the study (91610558-604.01.02). The informed, voluntary form was included at the beginning of the questionnaire form. Participants were informed, read, and approved of the voluntary consent form and were directed to the questions. The research was conducted with the principles of the Declaration of Helsinki. The informed consent form was included on the first page of the online questionnaire. The questionnaire was not allowed to start until the participants gave their consent. The collected data were stored anonymously in the researchers' online survey account.

**RESULTS**

The mean age of the participants was 31.9 ± 6.3 years. Furthermore, 72.3% of the women had a university or higher education level and 50.8% were employed. Approximately half of the participants (56.8%) describe their economic status as moderate. During the COVID-19 pandemic, it was determined that the longest-lived places were primarily metropolitan and cities (respectively %52, 24.7). Among the women, 64.9% used modern contraceptives.

**Table 1.** Pregnancy and Contraception Experiences of Women in the COVID-19 Pandemic

Characteristic (N=502)	(n)	(%)
<b>Fear of getting pregnant</b>	294	58.6
<b>Getting pregnancy during the pandemic</b>	23	4.6
<b>Concern about accessing the contraceptive method</b>	118	23.5
<b>Difficulty in accessing the modern contraceptive method</b>	30	6.0
Condom	18	60
Contraceptive pills	9	30
Intrauterin device	2	6.6
Injectable	1	3.3
<b>Changing the contraceptive method</b>	31	6.2
<b>Reason for Changing the Contraceptive Method (n=31)*</b>		
Advers effect	9	29
Difficulty in obtaining	8	25.8
Desire to a more effective method	7	22.6
Partner feeling uncomfortable with the method used	7	22.6
<b>Request for Contraceptive Method Counseling</b>	43	8.6
<b>Availability of Access to Healthcare Professionals for Contraceptive</b>	24	55.8
<b>Method Counselling (n=43)*</b>		

\* Percentages are taken from n.  
 \*\* Multiple answers were possible.

More than half of the participants (58.6%) reported fear of getting pregnant during the pandemic. Approximately a quarter of women (23.5%) were concerned about accessing contraceptives during this period. Six percent reported difficulties in obtaining contraceptives. Similarly, among women who changed their

contraceptive methods, a quarter reported difficulties in access (Table 1).

**Table 2.** Logistic regression analysis of the difficulty in accessing modern contraceptives during the pandemic

	Univariate		Multivariate	
	OR (%95 CI)	p	OR (%95 CI)	p
<b>Constant</b>				<.01
<b>Employment Status</b>				
Yes (Ref.)				
No	2.1 (.98- 4.7)	.05		
<b>Economic Level</b>				
High (Ref.)				
Low	3.3 (1.4- 7.6)	<.01	1.6 (.5- 5.1)	.40
Middle	3.2 (1.1- 9.5)	.03	1.2 (.3- 5.2)	.73
<b>Education</b>				
High school (Ref.)				
Primary school	2.4 (1.1- 5.1)	.02	1.3 (.4-3.8)	.62
<b>Place of procurement</b>				
Private (Ref.)*				
Public**	4.5 (2- 10.2)	<.001	3.2 (1.2- 8.8)	.02
<b>Difficulty in accessing contraceptive method pre-pandemic</b>				
No (Ref.)				
Yes	40 (12.3- 129.9)	<.001	42.6 (9.3- 194.6)	<.001
<b>Contraceptive method changing status</b>				
No (Ref.)				
Yes	4,4 (1,6- 11,9)	<.01	5.32 (1.5-18.2)	<.01

Cox & Snell R Square= .14; Nagelkerke R Square= .33, Accuracy= .94. \* private health institutions, pharmacy, market, \*\*public health institutions, primary health center

The predictors that cause women to have difficulty accessing contraceptives and changing their methods during the pandemic were examined by logistic regression analysis (Table 2, Table 3).

The results of the univariate analysis indicated that several variables were significantly associated with difficulty accessing contraceptives during the pandemic. These variables included economic level, educational status, place of procurement, and difficulty accessing contraceptives prior to the pandemic. The multivariate logistic regression model included these variables. The model was significant, and a indicated moderate predictive power (Nagelkerke’s R<sup>2</sup>=0.33). The results revealed difficulty in accessing contraceptives pre-pandemic, public procurement location, and

changes in contraceptive methods as predictors of difficulty in accessing contraceptives (Table 2).

**Table 3.** Logistic regression analysis of the contraceptive method change during the pandemic

	Univariate		Multivariate	
	OR (95% CI)	p	OR (95% CI)	p
<b>Unintended pregnancy</b>				
No (Ref.)				
Yes	7.0(2.9-16.7)	<.001	6.5 (2.5-16.6)	<.001
<b>Difficulty in accessing contraceptive method pre-pandemic</b>				
No (Ref.)				
Yes	5.5 (1.7-18.7)	<.01	2.3 (0.5-9.6)	.25
<b>Fear of getting pregnant</b>				
No (Ref.)				
Yes	5.1 (1.7-14.9)	<.01	4.4 (1.4-13.9)	.01
<b>Concern about accessing the contraceptive method during pandemic</b>				
No (Ref.)				
Yes	2.9 (1.3-6)	<.01	1.4 (0.6-3.2)	.42
<b>Difficulty accessing contraceptive method during pandemic</b>				
No (Ref.)				
Yes	5.1 (1.9-13.8)	<.01	2.1 (.6- 7.1)	.20

Cox & Snell R Square= .07; Nagelkerke R Square= .18, Accuracy= .93

Table 3 shows the results of the univariate and multivariate analyses that evaluated the factors associated with contraceptive method change during the pandemic. According to the findings of univariate analysis, unintended pregnancy, difficulty accessing contraception before the pandemic, fear of getting pregnant, concern about accessing contraception during the pandemic, and difficulty accessing contraception were statistically significant ( $p < .05$ ). The logistic regression model included these variables. The model was significant, and a indicated weak predictive power (Nagelkerke’s  $R^2=0.18$ ). According to the results of the analysis, the odds of changing the contraceptive method were 4.4 times higher in those who had a fear of getting pregnant and 6.5 times higher in those with a history of unintended pregnancy (Table 3).

## DISCUSSION

It is known that the social crises experienced from the past to the present have a negative impact on sexual and reproductive health (Sohrabi et al., 2020; UNDP, 2020; WHO, 2022). It is predicted that the COVID-19 pandemic has similarly increased contraceptive access difficulties, create an additional unmet need for family planning, and cause unwanted pregnancies (UNFPA, 2020; IPPF, 2020; Riley et al., 2020). In the concept of unwanted pregnancy, the planning time of pregnancy is also crucial besides the number of desired children (Hunie, 2021). This study determined that more than half of the women had anxiety about getting pregnant during the pandemic. Similarly, the literature has reported that women tend to delay their pregnancy plans during the COVID- 19 pandemic and have a fear of becoming pregnant (Lindberg et al., 2020; Luppi, Arpino & Rosina, 2022; Micelli et al., 2020). In addition, some studies show that the restrictions applied during the pandemic period negatively affect access to contraceptive methods (Anderson et al., 2020; Ally, Haeger, Christy & Johnson, 2020). This study determined that 23.5% of women had concern about accessing the contraceptive method during the pandemic, and 6% of women had difficulty accessing it. The workload due to Covid-19 in health services provided in hospitals has made access to contraception services difficulty. Contraceptive access difficulties were more common in those who obtained methods from public institutions than in the private (UN, 2022). In addition to the difficulty in obtaining the method from public institutions during the pandemic period, the current restrictions may have caused women to be concerned about obtaining the method from private institutions.

It was found that women who were concerned

about access to contraceptives experienced similar difficulties in accessing contraceptives in the pre-pandemic period. It was found that women who had difficulty accessing contraceptives during the pre-pandemic period were 42.68 times more likely to be unable to access the method than other women during the pandemic period. Also, it has been determined that women who access the method they use from the public sector have more difficulty accessing it. There are findings in the literature showing that developing countries where contraceptive method service delivery is not sufficient will be more affected by crises such as pandemics and will experience more disruptions in the services provided through public sectors (Riley et al., 2020). This shows that before the pandemic, women had difficulty in accessing contraceptive methods due to socioeconomic reasons and obtained the method from public institutions; therefore, difficulties in procurement were experienced with the pandemic. In addition, economic problems that emerged with the pandemic may have also caused women to experience difficulties in obtaining methods.

In this study, nearly half of the women who changed their contraceptive method during the pandemic stated that the change was due to the difficulty of accessing the contraceptive method and the desire for a more effective method of contraception during the pandemic. Similarly, it is known that women tend to prefer LARCs (IUD, implant, etc.) and injectable contraceptive methods during the pandemic period, and this is positively related to the anxiety of accessing contraceptive methods (Lindberg et al., 2020). In addition, this study determined that having an unintended pregnancy pre-pandemic (6.5 times), and the fear of becoming pregnant (4.4 times) were essential predictors of the contraceptive method change. In other words,

it is seen that women who think they have a high risk of pregnancy change their methods more during the pandemic period. Similar to the findings of the previous studies, our findings show that women with high-risk perceptions of unwanted pregnancy use more contraceptive methods during the pandemic than other women (Ahinkorah, 2020; Tu, Li, Jiang, Pei & Gu, 2021; Baxter et al., 2023). It is thought that women's access to counseling services required for contraceptive method change was also adversely affected during the COVID-19 pandemic (Fruzetti et al., 2020). In this study, 44.2% of women who needed contraception counseling could not access this service. However, due to the limited number of women seeking access, these results need to be interpreted with caution. Furthermore, the difficulty in accessing contraception counseling during the pandemic increases the risk of women having an unwanted pregnancy (Hunie, 2021). For this reason, it is essential to improve the provision of sexual and reproductive health services in crisis cases such as pandemics (Hall et al., 2020). Learnings from other epidemics (Zika, Ebola, SARS etc.) demonstrate that contraceptive method preferences and needs may change over the duration of the outbreak, emphasising the need to maintain accessibility and availability of contraceptive method services (Polis et al., 2022; Weinberger et al., 2020). The fact that women experience difficulties in accessing contraceptive methods and change the methods they use shows that sexual and reproductive health services are not accessible and sustainable.

In conclusion, it is known that social crises directly or indirectly affect contraception services negatively. This study found that most women use modern contraceptives, and they have a fear of getting pregnant and not accessing contraceptives during the pandemic. It

was found that in women who had difficulty accessing contraceptives before the pandemic, pandemic conditions could exacerbate the difficulty in accessing, public institutions may be more affected by the pandemic conditions, and more breakdown may occur in service delivery. In addition, it has been determined that women who had an unwanted pregnancy before the pandemic and fear becoming pregnant during the pandemic made more contraceptive changes.

### **Limitations**

There were some limitations in this study. In this study, data were collected online because of pandemic restrictions. For this reason, women with a high level of education and a middle or higher economic status were reached. Therefore, the rate of use of modern contraceptive methods was found to be higher compared to national data (49% vs. 64.9%) (UN, 2022). It is thought that this result is due to the high educational level and economic level of the sample. As education level and economic levels increase, the rate of use of modern contraceptive methods increases (Apanga, Kumbeni, Ayamga, Ulanja & Akparibo, 2020). Thus, results for individuals of low socioeconomic status should be interpreted with caution. This study collected data on contraceptive access difficulties before the pandemic and was retrospective. Therefore, it may contain a recall bias from participants. It also focused on the short-term effects of the pandemic on contraceptives. As a result, it lacks data on the long-term effects of the pandemic on contraceptive use.

### **IMPLICATIONS FOR PRACTICE**

It is essential to take measures to increase access to contraception services and ensure that services are not affected by the breakdown in the supply chain. Alternative services delivery models (tele-nursing, self-administered

injectable contraceptives, counseling method via mobile applications, contraceptive method dispensing of women) that are integrated, community-based and digital can help sustain women's contraceptive options, increase autonomy, reduce access-related barriers, and alleviate women's concern on access contraceptive method. It is recommended to prepare web-based health service delivery infrastructures and increase telemedicine practices and counselling intervention for the use of LARCs, which are less likely to be affected by crises for example pandemics, can be increased. Moreover, research to determine the access status and needs of women with especially low socioeconomic status to contraceptive methods in public health crises would be useful. In addition to all these, it is recommended to create psychosocial support systems to address women's fears in extraordinary crises such as pandemics and include them in counselling services.

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