Araştırma Makalesi / Research Article

DOI: http://dx.doi.org/10.61535/bseusbfd.1400292

Online Contraception Counseling for Primiparous Women: A Randomized Controlled Trial*

Duygu Tatar [1♦], Meltem Demirgöz Bal [2]

[1] Midwifery, Marmara University, İstanbul, Türkiye / duygutatar@marmara.edu.tr.

[2] Prof., Marmara University, İstanbul, Türkiye / meltem.bal@marmara.edu.tr.

Abstract: The aim of this study was to investigate the effect of contraception counseling on contraceptive method use in the postpartum period in primiparous women. Data were collected using a questionnaire form prepared by the researchers. The randomized controlled trial was conducted with 70 primiparous women. The intervention group received individualized online contraceptive counseling at 2, 4, and 6 months postpartum. The control group did not receive any intervention. After the sixth month is completed, contraceptive method use was evaluated in both intervention and control groups. While there was no unintended pregnancy in the intervention group, unintended pregnancies occurred in the control group ($p<0.05$). After counseling, the rate of modern method use in the intervention group was statistically significantly higher than in the control group ($p<0.05$). In regions where access to counseling services is limited due to economic, geographical, or cultural constraints, online counseling has the potential to increase contraceptive use, prevent unintended and closely spaced pregnancies, and support continued breastfeeding.

Keywords: Contraception, Primiparity, Breastfeeding, Online Counseling.

JEL Classification: I1, I10, I19

Received Date: 04.12.2023

Accepted Date: 20.02.2024

How to Cite this Article: Tatar, D., & Demirgöz-Bal, M. (2024). Online Contraception Counseling for Primiparous Women: A Randomized Controlled Trial. *Bilecik Şeyh Edebali Üniversitesi Sağlık Bilimleri Fakültesi Dergisi,* 2(3), 148-158.

Primipar Kadınlara Verilen Çevrimiçi Kontrasepsiyon Danışmanlığı: Randomize Kontrollü Bir Çalışma

Duygu Tatar [1♦], Meltem Demirgöz Bal [2]

[1] Ebe, Marmara Üniversitesi, İstanbul, Türkiye / duygutatar@marmara.edu.tr.

[2] Prof. Dr., Marmara Üniversitesi, İstanbul, Türkiye / meltem.bal@marmara.edu.tr.

Özet: Bu çalışmanın amacı, primipar kadınlarda doğum sonu dönemde çevrimiçi kontrasepsiyon danışmanlığının kontraseptif yöntem kullanımı üzerindeki etkisini incelemektir. Veriler araştırmacılar tarafından hazırlanan bir anket formu kullanılarak toplanmıştır. Randomize kontrollü tasarımlı bu çalışma 70 primipar kadın ile yürütülmüştür. Girişim grubuna, doğum sonu 2., 4. ve 6. aylarda bireyselleştirilmiş çevrimiçi kontrasepsiyon danışmanlığı verilmiştir. Kontrol grubuna herhangi bir girişimde bulunulmamıştır. Altıncı ay tamamlandıktan sonra hem girişim hem de kontrol gruplarındaki katılımcıların kontraseptif yöntem kullanımı değerlendirilmiştir. Girişim grubunda istenmeyen gebelik yaşanmazken, kontrol grubunda istenmeyen gebelikler meydana gelmiştir ($p<0.05$). Danışmanlık sonrası girişim grubunda modern yöntem kullanım oranı, kontrol grubuna göre istatistiksel olarak anlamlı şekilde yüksek olarak saptanmıştır ($p<0.05$). Ekonomik, coğrafi veya kültürel kısıtlılıklar nedeniyle danışmanlık hizmetlerine erişimin sınırlı olduğu bölgelerde, çevrimiçi danışmanlık kontraseptif yöntem kullanımını artırma, istenmeyen ve yakın aralıklı gebelikleri önleme ve emzirmeye devam etmeyi destekleme potansiyeline sahiptir.

Anahtar Kelimeler: Kontrasepsiyon, Primiparite, Emzirme, Çevrimiçi Danışmanlık.

JEL Sınıflandırması: I1, I10, I19

Başvuru Tarihi: 04.12.2023

Kabul Tarihi: 20.02.2024

Bu Makaleye Atıf İçin: Tatar, D., & Demirgöz-Bal, M. (2024). Online Contraception Counseling for Primiparous Women: A Randomized Controlled Trial. *Bilecik Şeyh Edebali Üniversitesi Sağlık Bilimleri Fakültesi Dergisi,* 2(3), 148-158.

♦ ***Corresponding Author / Sorumlu Yazar***

* *This study was approved by Marmara University Ethics Committee with the decision dates 17.01.2022 and 01 numbered.*

GENİŞLETİLMİŞ ÖZET

Araştırma Problemi

Doğum sonrası bakım, anne ve yeni doğmuş bir bebeğin sağlığını ve refahını sağlamak için çok önemlidir. Bu kritik dönemde yeni bir gebelik oluşumu bu süreci sekteye uğratmakta, hem anne hem de bebek için birtakım olumsuz durumlara yol açabilmektedir. Anne ve yenidoğan sağlığının desteklenmesi ve risklerin önlenmesi için iki gebelik arasındaki sürenin yeterli olması önemlidir. Doğurganlığın düzenlenmesi hizmetlerine erişim sağlayamama veya yanlış birtakım bilgiler nedeniyle istenmeyen gebelikler yaşanabilmektedir. Ayrıca emzirme nedeniyle kadınların kullanabilecekleri kontraseptif yöntem seçenekleri azalmaktadır. Primipar kadınlara verilen bireyselleştirilmiş çevrimiçi kontraseptif danışmanlığın kontraseptif yöntem kullanımına etkisini belirlemek bu çalışmanın temel amacıdır.

Araştırma Soruları

Sağlık hizmetlerine erişimin sınırlı olduğu bir bölgede, primiparlara verilen bireyselleştirilmiş çevrimiçi kontraseptif danışmanlığın kontraseptif yöntem kullanımına etkisi nedir?.

Literatür Taraması

Doğum sonrası erken dönem, anneliğe alışma sürecinde fiziksel ve duygusal değişimlerin yaşandığı, kadının hayatında kritik bir evredir. Dünya genelinde, doğum sonrası erken dönemde istenmeyen gebelikler yaşanabilmekte ve emzirmenin başlatılması ve devam ettirilmesi hayal kırıklığı yaratacak kadar düşük kalabilmektedir. Bu nedenle doğum sonu etkin emzirmenin ve dolayısıyla altı aylık dönemde kontrasepsiyonun sağlanması ve devamında etkin bir yöntemin kullanılmaya başlanması çok önemlidir. Çevrimiçi kontraseptif danışmanlık, bu dönemde erişilebilirlik, kolaylık ve kişiselleştirilmiş destek açısından çok sayıda fayda sunan önemli bir araç olarak ortaya çıkmaktadır. Çevrimiçi kontraseptif danışmanlığının başlıca avantajlarından biri erişilebilirliğidir. Doğum sonrası erken dönemde, yeni anneler yeni doğmuş bir bebeğe bakmanın getirdiği zorluklar nedeniyle yüz yüze randevulara katılmakta zorluk yaşayabilir. Çevrimiçi danışmanlık, coğrafi engelleri ortadan kaldırarak kadınların evlerinin rahatlığında rehberlik almalarına olanak tanır. Bu artan erişilebilirlik, daha fazla sayıda kadının kontraseptif seçenekler hakkında önemli bilgilere erişebilmesini sağlayarak daha bilinçli kararlar almasını sağlayabilir. İlaveten çevrimiçi danışmanlık, bireysel ihtiyaçlara göre uyarlanmış kişiselleştirilmiş destek için bir platform sağlar. Yeni annelerin doğum kontrolüne ilişkin benzersiz endişeleri ve tercihleri olabilir ve çevrimiçi format daha bireyselleştirilmiş bir yaklaşıma olanak tanır. Bu yolla kontraseptif yöntemler hakkında bilgi sağlanarak kadınlar yaşam tarzları ve tercihleriyle uyumlu, bilinçli kararlar almaları için güçlendirilebilir. Ayrıca doğum sonrası erken dönem, kadınların çok sayıda değişiklik yaşadığı bir dönemdir ve doğum kontrolü her zaman endişelerinin ön saflarında yer almayabilir. Çevrimiçi danışmanlık, aile planlamasının önemi ve mevcut kontraseptif seçenekler hakkında farkındalığı artıran bir eğitim aracı olarak hizmet vermektedir. Çevrimiçi platformlar, doğru ve güncel bilgileri yayarak, farklı doğum kontrol yöntemleriyle ilişkili avantajların, dezavantajların ve potansiyel yan etkilerin daha iyi anlaşılmasına katkıda bulunabilir. Çevrimiçi şekilde verilen kontraseptif yöntem danışmanlığı hem istenmeyen gebelik oluşumunu engelleyebilir hem de modern yöntem kullanımını artırabilir ve emzirme devamlılığında son derece etkili rol oynayabilir.

Metodoloji

Bu randomize kontrollü çalışma Mart 2022 - Ağustos 2022 tarihleri arasında yürütülmüştür. Çalışmaya dahil edilme kriterleri; Bitlis Devlet Hastanesi'nde canlı doğum yapmış primipar olmak, 18 yaş ve üzerinde olmak, iletişim sorunu olmamak, Türk vatandaşı olmak, okuryazar olmak, akıllı telefon kullanmak ve çalışmaya katılmaya istekli olmaktır. Deney grubunda üç eğitim oturumunu tamamlayamayan kadınlar ve her iki grupta da altıncı ayın sonunda ulaşılamayan kadınlar bu çalışma için dışlama kriteri olarak kabul edilmiştir. Araştırmanın örneklem büyüklüğü güç analizi ile %95 güven aralığında 0.05 yanılgı düzeyinde 0.3 etki büyüklüğünde 0.95 evreni temsil gücüyle 70 kişi olarak belirlenmiştir. Çalışmaya dahil edilme kriterlerine uyan katılımcılar, araştırma konusu hakkında sözlü olarak bilgilendirilmiş, çalışmanın amacı açıklanmış ve yazılı bilgilendirilmiş onamları alınmıştır. Hem girişim hem de kontrol grubundaki kadınlara hastaneden taburcu olurken, hastane rutinleri doğrultusunda ilk kontraseptif yöntem danışmanlığı yüzyüze verilmiştir. Deney grubundaki katılımcılara 2., 4. ve 6. aylarda WhatsApp video görüşmeleri aracılığıyla kontraseptif danışmanlık sağlanmıştır. Her iki grup katılımcılarına altıncı ay tamamlandıktan sonra çevrimiçi bir değerlendirme yapılmıştır. CONSORT 2010 kılavuzuna göre yürütülen çalışmada randomizasyon, randomizasyon sitesi kullanılarak gerçekleştirilmiştir (https://www.randomizer.org/). Çalışmanın akışı Şekil 1'de gösterilmiştir. İncelenen demografik değişkenler arasında kadınların ve eşlerinin yaşı, eğitimi, çalışma durumu, ekonomik durumu ve sosyal güvencesi yer almaktadır. Bu çalışmanın ana sonuç değişkeni çevrimiçi danışmanlığın kontraseptif yöntem kullanımına etkisi, bağımsız değişkenleri ise sosyodemografik ve obstetrik özelliklerdir. Araştırmadan elde edilen verilerin analizinde, Statistical Package for Social Sciences (SPSS) subscription deneme sürümü kullanılmıştır. Veriler ki-kare testi ile analiz edilmiştir.

Bulgular ve Sonuç

Katılımcıların %60'ı 18-26 yaş grubu ve %42.9'u ilköğretim mezunudur. Katılımcıların %58.6'sı 18-25 yaş arasında ilk kez gebe kalmıştır. Katılımcıların %51.4'ünü gebeliği önleyici yöntem kullanımında eşi desteklemektedir. Katılımcıların çevrimiçi kontraseptif yöntem danışmanlığı sonrasında deney grubunda istenmeyen gebelik (n=0) yaşanmazken, kontrol grubunda (n=7) bu oran %20 olarak belirlenmiştir. Deney grubunda katılımcıların dörtte üçü modern yöntem kullanırken (n=26), kontrol grubunda yalnızca 5 kadın (n=%14.3) modern yöntemi tercih etmiştir. Çevrimiçi kontraseptif yöntem danışmanlığı gebeliği önleyici yöntem kullanımı üzerinde etkilidir.

INTRODUCTION

Family planning is a critical aspect of reproductive health that enables individuals and couples to make informed decisions regarding their reproductive health and well-being. Effective family planning services have been associated with a range of positive outcomes, including improved maternal and child health, reduced maternal mortality and morbidity, and increased gender equality (Lancet, 2017; Güvercin and Özan, 2019). The early and effective use of family planning methods is essential for reducing unintended pregnancies and promoting healthy birth spacing (WHO, 2015).

Several studies have consistently highlighted the potential risks associated with immediate contraception during the early postpartum period. Studies have indicated that women who conceive shortly after giving birth are at a higher risk of encountering maternal complications such as postpartum haemorrhage, high blood pressure, placental abruption, maternal malnutrition, maternal anaemia, and maternal depression. Furthermore, babies born from pregnancies that occur shortly after giving birth have shown an elevated risk of low birth weight, premature birth, NICU (Neonatal Intensive Care Unit) admission, and an increased likelihood of congenital disorders (WHO, 2005). These findings collectively highlight the importance of allowing an adequate interpregnancy interval to minimize risks and promote optimal maternal and neonatal health. The recent rise in digital technologies has created new opportunities to provide family planning services, including online counseling. Online counseling is a form of telemedicine that involves the provision of counseling and support services via the Internet (WHO, 2010). The use of online counseling for family planning services has several potential benefits, including increased access to services, reduced stigma, and improved privacy and confidentiality (Goldberg et al., 2017). However, the evidence on the effectiveness of online counseling for family planning is limited, particularly in the context of Türkiye (Sokmen et al., 2022; Elkan Kiyat and Kahyaoğlu Süt, 2023; Duran et al., 2023). Studies have shown that online counseling can be effective in promoting family planning in other settings. For example, a study conducted in Iran found that an online family planning counseling program was effective in increasing knowledge and use of modern contraceptives among women (Eslami and d'Arcangues, 2016). Similarly, a study in India found that an online counseling program increased contraceptive use and reduced unintended pregnancies among women living in rural areas (Ugaz et al., 2021). Similarly, a cross-sectional study conducted in Ghana in 2019 found that online counseling significantly increased the uptake of family planning services among women (Bawah et al., 2019).

Despite these promising findings, it is important to examine the effectiveness of online counseling in Türkiye, considering its unique sociocultural context. Yıldız et al. (2020) noted that Türkiye has made significant progress in expanding access to family planning services over the past few decades, with the government prioritizing family planning since the 1960s (Yıldız, 2019). Over the last 20 years, the use of modern contraceptive methods has increased from 31% to 49%. However, 21% of the women in Türkiye still rely on traditional methods, primarily withdrawal (20%). The prevalence of traditional contraceptive methods, especially among specific subgroups of women, has not undergone significant changes in the past decade (TNSA, 2018).

The provision of family planning services in Türkiye is influenced by contextual factors, including cultural norms, religious beliefs, and regional disparities. Studies have shown that many primiparous women face barriers to accessing these services, such as limited knowledge about contraceptive methods, cultural and social norms discouraging use, and difficulties related to geography and finances (Gür and Sohbet, 2017). The province of Bitlis, selected as the study location, exemplifies a region that encompasses all these distinctive

characteristics to a considerable degree. Research Question: What is the impact of individualised online contraceptive counseling given to primiparous women in a region with limited access to health services?.

2. LITERATURE REVIEW

The early postpartum period is a critical stage in a woman's life, with physical and emotional changes as she adjusts to motherhood. Worldwide, unintended pregnancies can occur in the early postpartum period and initiation and continuation of breastfeeding can be disappointingly low. Therefore, it is very important to ensure effective breastfeeding after childbirth and thus contraception during the six-month period and to start using an effective method thereafter. Online contraceptive counseling is emerging as an important tool that offers numerous benefits in terms of accessibility, convenience and personalised support during this period. One of the main advantages of online contraceptive counseling is its accessibility. In the early postpartum period, new mothers may find it difficult to attend face-to-face appointments due to the challenges of caring for a newborn baby. Online counseling removes geographical barriers, allowing women to receive guidance from the comfort of their homes. This increased accessibility can enable more women to access important information about contraceptive options, leading to more informed family decisions. In addition, online counseling provides a platform for personalised support tailored to individual needs. New mothers may have unique concerns and preferences regarding contraception and the online format allows for a more individualised approach.

3. MATERIALS AND METHODS

This randomized clinical trial was executed from March 2022 to August 2022. This study was conducted in Bitlis, a small province in Eastern Türkiye. Due to its location and equipment, the hospital serves a large number of women from neighbouring provinces and different health facilities.

3.1. Inclusion Criteria

The inclusion criteria for this study were primiparous women who had given birth to a live baby at the Bitlis State Hospital. Eligible participants were required to be at least 18 years old, capable of providing informed consent, free from communication difficulties, of Turkish nationality, literate, using a smartphone, and willing to participate in the study.

3.2. Exclusion Criteria

Women who were unable to complete three training sessions in the intervention group and those who could not be reached at the end of the sixth month in both groups were considered as exclusion criteria for this study.

3.3. Setting and Sample

The sample size of the study was determined as 70 people with an effect size of 0.3 at a bias level of 0.05 at a confidence interval of 95% and an effect size of 0.95 with the power to represent the universe. In the study 35 women in the intervention group and 35 women in the control group participated. In the study conducted according to the CONSORT 2010 manual, randomization was performed using a random site (https://www.randomizer.org/). The flow of this study is shown in Figure 1. The researcher provided face-to-face counseling to all women who met the inclusion criteria within the scope of the discharge service, following the Ministry of Health guidelines, before they were discharged from the hospital. The intervention and control groups were determined after face-to-face counseling to prevent possible bias.

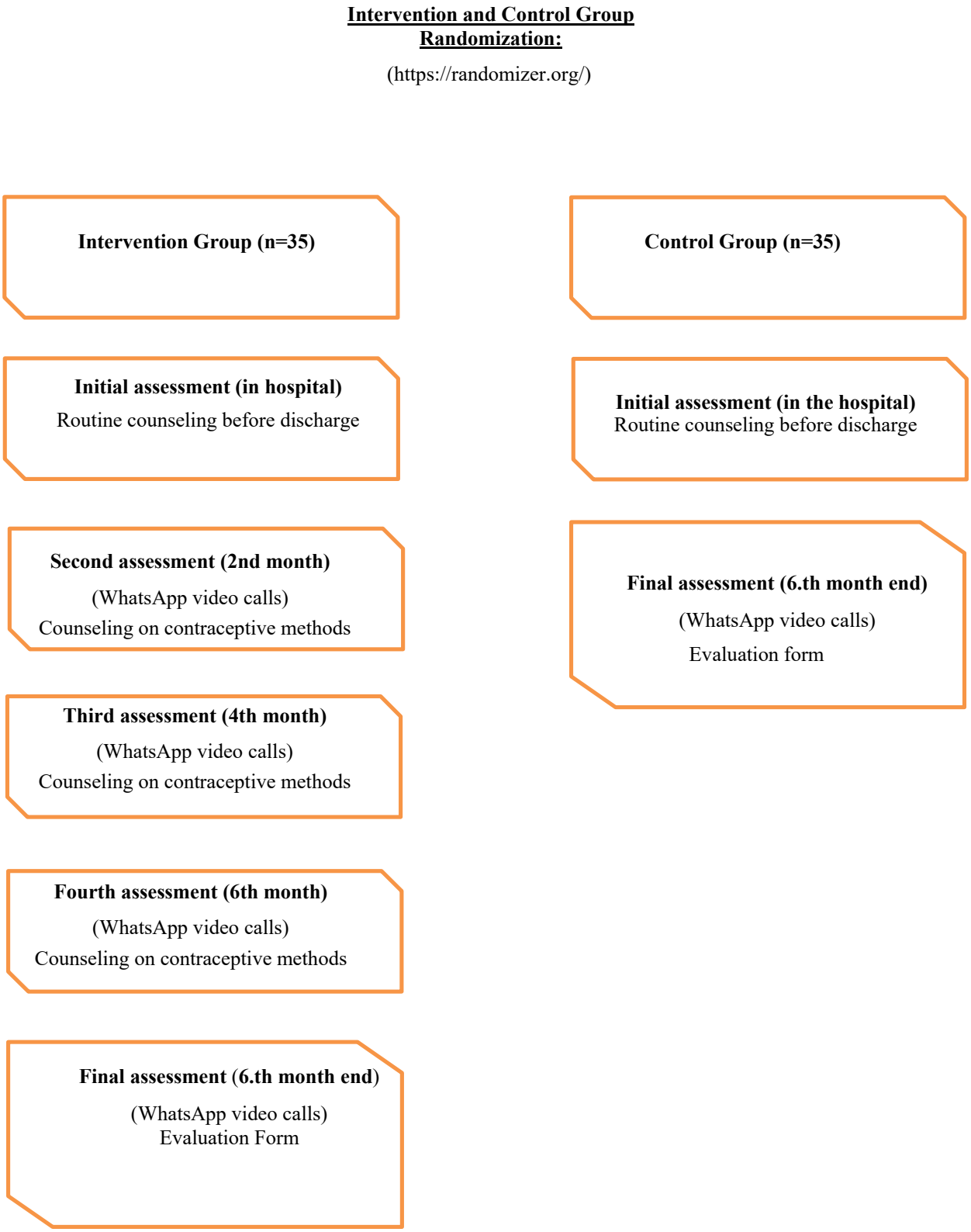

Figure 1. Research Flow Diagram

Before commencing the study, all women were verbally informed about the study's purpose, and written informed consent was obtained. The intervention group received contraceptive counseling via WhatsApp video calls in the 2nd, 4th, and 6th months. In the 2nd month after birth, the intervention group was informed about potential problems that may arise from a possible pregnancy, and information was provided about available methods. In the 4th month after delivery, in addition to method counseling, issues related to accessing contraceptive methods and suggested solutions were addressed. Counseling was repeated in the 6th month. At the end of the sixth month, participants were asked to share their counseling experiences, and a contraceptive method usage form was completed. In the control group, online access was provided at the end of the 6th month after delivery, and information regarding the contraceptive method used was recorded (see Figure 1).

3.4. Study Variables

The demographic variables examined included the age, education, working status, economic status, and social security of women and their spouses. The main outcome variable of this study was the effect of online counseling, and the independent variables were sociodemographic and obstetric characteristics.

3.5. Statistical Analysis

The data obtained from the research were statistically analysed using the Statistical Package for Social Sciences (SPSS) subscription trial version. Data were analysed using the chi-square test. Significance value was determined as $p<0.05$.

3.6. Ethical Considerations

This study was approved by Marmara University Ethics Committee with the decision dates 17.01.2022 and 01 numbered. Clinical number is NCT05355636.

4. RESULTS

The sociodemographic characteristics of the women who participated in this study are presented in Table 1. The 60% of the participants are in the 18-26 age group and 40% are in the 27-36 age group. The results showed that all groups were homogeneous in terms of demographic characteristics at the beginning of the study ($p>0.05$) (see Table 1).

Table 1. Characteristics of the Participants (n=70)

Characteristics		Intervention Group		Control Group		Total		Analysis*
		n	%	n	%	n	%	
Age	18-26 years	19	54.3	23	65.7	42	60.0	χ^2 =0.536 P=0.464*
	27-36 years	16	45.7	12	34.3	28	40.0	
Educational Level	Primary	15	42.9	15	42.9	30	42.9	χ^2 =0.440 p=0.803*
	High School	14	42.9	12	34.3	26	37.1	
	University	6	17.1	8	22.9	14	20.0	
Employment Status	Working	8	22.9	8	22.9	16	22.9	χ^2 =0.000 p=1.000*
	Not working	27	77.1	27	77.1	54	77.1	
Economic Level	Income less than expenditure	11	31.4	13	37.1	24	34.3	χ^2 =0.108 p=0.743*
	Income equal to expenditure	23	65.7	18	51.4	41	58.6	
	Income more than expenditure	1	2.9	4	11.4	5	7.1	
Family Type	Nuclear family	30	85.7	24	68.6	54	77.1	χ^2 =2.025 p=0.155*
	Extended family	5	14.3	11	31.4	16	22.9	
	19-28 age	15	42.9	22	62.9	37	52.9	χ^2 =2.064

Spouse's Age	29-38 age	20	57.1	13	37.1	33	47.1	p=0.151*
Spouse's Educational Level	Primary	15	42.9	11	31.4	26	37.1	χ^2 =1.600 p=0.449*
	High School	11	31.4	16	45.7	27	38.6	
	University	9	25.7	8	22.9	17	24.3	
Spouse's occupation	Worker	23	65.7	22	62.9	45	64.3	χ^2 =0.062 p=0.803*
	Officer	12	34.3	13	37.1	25	35.7	

** χ^2 = Chi-Square Test*

The pregnancy rate in the early postpartum period was significantly higher in the control group (p<0.05) (see Table 2).

Table 2. Unintended Pregnancy of Participants

Unintended Pregnancy	**Intervention Group**		**Control Group**		**Total**		**Analysis***
	n	**%**	**n**	**%**	**n**	**%**	
Yes	0	0.0	7	20.0	7	10.0	χ^2 =7.778 p<0.05*
No	35	100.0	28	80.0	63	90.0	

** χ^2 = Chi-Square Test*

Table 3 shows the distribution of contraceptive methods used by the participants after counseling. In the control group, 68.5 percent of the women refrained from using any contraceptive method. The rate of the effective method used by the intervention group was significantly higher than that used by the control group (p<0.05). Participants in the intervention group reported that they breastfed their babies for the first six months, while participants in the control group reported that they started supplementary food before the sixth month.

Table 3. Methods Used by the Participants

Contraceptive Methods	**Intervention Group**		**Control Group**		**Total**		**Analysis***
	n	**%**	**n**	**%**	**n**	**%**	
Modern Contraception (IUD, progestogen-only pill, Tubal ligation)	26	74.3	5	14.3	31	44.3	χ^2=49.79 P<0.05*
Lactation amenorrhea	8	22.9	0	0.0	8	11.4	
Withdrawal Method	1	2.9	6	17.1	7	10	
No Method Usage	0	0,0	24	68,6	24	34,3	

* χ^2 = Chi-Square Test

CONCLUSION AND DISCUSSION

A pregnancy interval of fewer than six months carries a high degree of risk for both the mother and the baby, making it extremely precarious (WHO, 2015). The study findings indicated that women who received online counseling experienced no unintended pregnancies, while the control group did. These results align with previous studies by Athey et al. (2023) and Chuang et al. (2015), demonstrating the effectiveness of online counseling in reducing unintended pregnancies. (Athey et al., 2023; Chuang et al., 2015). Furthermore, a systematic review by Peterson et al. (2019) examining the effectiveness of interventions targeting postpartum contraception found that technology-based interventions, including online counseling, were associated with higher rates of contraceptive use and reduced unintended pregnancies. (Peterson et al., 2019). However, the studies by McCarthy et al. (2018) and Smith et al.

(2015) present mixed findings, suggesting that the impact of online counseling may vary (McCarthy et al., 2018; Smith et al., 2015). Further research with different samples is needed to better understand the relationship between online counseling and unintended pregnancies in the early postpartum period.

The results of our study are consistent with previous research, indicating that online counseling can be an effective way to increase the rate of effective family planning method use among primiparous women. A recent meta-analysis found that counseling interventions led to increased use of modern contraception among women (Goueth et al., 2022). Another study in Egypt found that women who received counseling were more likely to use modern contraceptive methods than those who did not (Aziz et al., 2023).

Recent studies have also investigated the potential of technology-based interventions, such as mobile phone applications and social media platforms, to improve family planning methods. For instance, a randomized controlled trial in Mozambique found that women who received text message reminders were more likely to continue using modern contraceptive methods than those who did not receive reminders (Leight et al., 2022). Another study in Nigeria found that women who received counseling through a social media platform had greater contraceptive knowledge and use than those who received counseling through a clinic (Okunlola et al., 2023). Similarly, a recent randomized controlled trial in Pakistan found that mobile phone-based intervention significantly increased the use of modern contraceptive methods among married women (Abrejo et al., 2022). Other studies conducted that online counseling was effective in improving the knowledge of family planning methods and increasing the use of modern contraceptives (Aung et al., 2020; Smith et al., 2015). These findings suggest that online counseling is a suitable and convenient option, particularly for women living in rural areas with limited access to healthcare services. Our study, which was conducted in a similar rural context, aligns with these findings (Jain et al., 2021). It is found that face-to-face counseling was effective in increasing the use of long-acting reversible contraceptives (Farrokh et al., 2014). Another study conducted by George et al. (2015) found that face-to-face counseling was effective in improving knowledge of family planning methods and increasing the use of modern contraceptives (George et al., 2015). However, the effectiveness of counseling on the family planning method used may depend on various factors, such as cultural context, quality of counseling, and availability of family planning services. A study conducted in Nigeria found that although counseling improved knowledge about contraception, it did not translate into increased use of modern contraceptive methods (Omo-Aghoja et al., 2009). Similarly, a study conducted in Türkiye found that counseling did not have a significant effect on the use of long-acting reversible contraceptives among women (Kırıcı et al., 2020). Overall, while our study and others have demonstrated the potential of online counseling to improve family planning method use, more research is needed to identify the most effective counseling strategies and ensure that they are accessible to all women, particularly those in low-resource settings.

In Türkiye, the rate of breastfeeding continuation in the first month is quite low (9.5%) (TNSA, 2018). In this study, all women in the control group were breastfed for six months, whereas all women in the control group switched to supplementary food. Even in the intervention group, 8 women provided contraception with Lactational Amenorrhea Method (LAM). Consistent with our study, previous research has demonstrated that online counseling is an effective strategy for encouraging the adoption of LAM (Lau et al., 2016). A randomised controlled trial conducted in Türkiye found that women who received online breastfeeding counselling breastfed their babies more effectively and for longer (Karaahmet et al., 2022). Similarly, a recent schematic review found that women who

received counselling with an Internet-based Electronic Technology Intervention significantly increased their breastfeeding duration compared to those who did not (Almohanna et al., 2020). These studies suggest that online counseling can be an effective strategy for promoting LAM use among women.

However, some studies have reported mixed or inconclusive results regarding the effects of online counseling on LAM use. For example, Van Der Wijden et al. found no significant difference in pregnancy rates between fully breastfeeding amenorrheic women who used LAM and were supported to do so, and those who did not use any method. As the length of lactational amenorrhea in women using LAM varies widely between the populations studied and is population-specific, it is unclear whether LAM prolongs lactational amenorrhea (Van Der Wijden and Manion, 2015).

Based on our study, we observed a significant disparity in the utilization of modern family planning methods and the Lactational Amenorrhea Method (LAM) during the postpartum period among women who received online counseling services compared with the control group. Notably, none of the participants in the intervention group had unintended pregnancies during this period. Our findings strongly indicate that the family planning counseling services provided prior to discharge in our country are inadequate. To bridge the healthcare gaps, it is vital to prioritize women facing geographical, cultural, and economic barriers through targeted interventions. Prioritizing extended birth intervals and preventing early postpartum pregnancy protects maternal and foetal health. In Türkiye current health system, postnatal family planning services are primarily provided as part of the standard discharge education at the hospital where the birth took place. General family planning services are provided by midwives and public health nurses in family health centres. However, this service is dependent on women's specific requests for counseling. To ensure the provision of comprehensive counseling services, it is imperative to proactively monitor and follow-up all women during the postpartum period, regardless of their explicit request. In addition, online counseling offers a promising way to overcome geographical and economic barriers and provides wider access to basic support and guidance on family planning issues.

These findings may not apply to multiparous women or women living in different cultural or geographical locations, which limits the generalizability of the study. Women who volunteered for the study may differ from those who did not volunteer. This could potentially lead to bias. This study assumes that participants have reliable Internet access and digital literacy skills, potentially excluding lower socioeconomic groups. The follow-up period was limited to six months, limiting the understanding of the sustained impact of online counseling on contraception behaviours. The reliance on self-reported data introduces potential biases such as recall bias or social desirability bias.

AUTHOR CONTRIBUTION STATEMENT

All authors have contributed equally.

STATEMENT OF SUPPORT AND THANKS

The study has not received any form of support. There is no institution or individual to be acknowledged for there assistance.

CONFLICT OF INTEREST STATEMENT

There is no conflict of interest with any institution or person within the scope of the study.

REFERENCES

Abrejo, F.G., Iqbal, R. & Saleem, S. (2022). Women's Perceptions About Mobile Health Solutions for Selection and Use of Family Planning Methods in Karachi: a Feasibility Study. *Bmc Women's Health, 22*, 490. https://doi.org/10.1186/s12905-022-02086-1

Almohanna, A. A., Win, K. T., & Meedya, S. (2020). Effectiveness of Internet-Based Electronic Technology Interventions on Breastfeeding Outcomes: Systematic Review. *Journal of medical Internet research, 22*(5), e17361. https://doi.org/10.2196/17361

Athey, S., Bergstrom, K., Hadad, V., Jamison, J. C., Özler, B., Parisotto, L., & Sama, J. D. (2023). Can Personalized Digital Counseling Improve Consumer Search for Modern Contraceptive Methods?. *Science Advances, 9*(40), Eadg4420. https://doi.org/10.1126/sciadv.adg4420

Aung, B., Mitchell, J. W., & Braun, K. L. (2020). Effectiveness of mHealth Interventions for Improving Contraceptive Use in Low- and Middle-Income Countries: A Systematic Review. *Global health, science and practice, 8*(4), 813–826. https://doi.org/10.9745/GHSP-D-20-00069

Aziz, M.M., El-Gazzar, A, F. (2023). Provider Bias and Family Planning in Upper Egypt: a Simulated Client Approach. *J. Egypt. Public. Health. Assoc. 98*, 19. https://doi.org/10.1186/s42506-023-00144-6

Bawah, A. A., Asuming, P., Achana, S.f. et al. (2019). Contraceptive Use Intentions and Unmet Need for Family Planning Among Reproductive-aged Women in the Upper East Region of Ghana. *Reprod Health, 16*, 26. https://doi.org/10.1186/s12978-019-0693-x

Chuang, C. H., Velott, D. L., Weisman, C. S., et al. (2015). Reducing Unintended Pregnancies Through Web-based Reproductive Life Planning and Contraceptive Action Planning Among Privately Insured Women: Study Protocol for the Mynewoptions Randomized, Controlled Trial. *Women's Health Issues: Official Publication of the Jacobs Institute of Women's Health, 25*(6), 641–648. https://doi.org/10.1016/j.whi.2015.06.010

Duran, H. Dağ Tüzmen H, & Döner Ş,İ. (2023). "Family Planning Attitude In Turkish Culture: Relationship Between Experiencing Unintended Pregnancy, Receiving Counseling, And Accessing Methods", *IJHSRP, 8*(1), 17–27, https://doi.org/10.33457/ijhsrp.1260825

Elkan Kiyat, Z., & Kahyaoğlu Süt, H. (2023). Covıd-19 Pandemisinde Üreme Sağlığı ve Modern Aile Planlaması Yöntem Danışmanlığı. *Ordu Üniversitesi Hemşirelik Çalışmaları Dergisi, 6*(2), 497-504. https://doi.org/10.38108/ouhcd.1068848

Eslami, M., & D'arcangues, C. (2016). Aiming for Quality in Iran's National Family Planning Program- Two Decades of Sustained Efforts. *Contraception, 93*(3), 209–215. https://doi.org/10.1016/j.contraception.2015.11.013

Farrokh-eslamlou, H., Aghlmand, S., Eslami, M., & Homer, C. S. (2014). Impact of the World Health Organization's Decision-making Tool for Family Planning Clients and Providers on the Quality of Family Planning Services in Iran. The Journal of Family Planning and Reproductive *Health Care, 40*(2), 89–95. https://doi.org/10.1136/jfprhc-2012-100290

George, T. P., DeCristofaro, C., Dumas, B. P., & Murphy, P. F. (2015). Shared Decision Aids: Increasing Patient Acceptance of Long-Acting Reversible Contraception. *Healthcare (Basel, Switzerland), 3*(2), 205–218. https://doi.org/10.3390/healthcare3020205

Goldberg, D.G., Sahgal, B., Beeson, T., Wood, S.f., Mead, H., Abdul-Wakil, A., Stevens, H., Rui, P., & Rosenbaum, S.J. (2017). Patient Perspectives on Quality Family Planning Services in Underserved Areas. *Patient Experience Journal, 4*, 54-65. https://doi.org/10.35680/2372-0247.1194

Goueth, R. C., Maki, K. G., Babatunde, A., Eden, K. B., & Darney, B. G. (2022). Effects of Technology-based Contraceptive Decision Aids: a Systematic Review and Meta-analysis. *American Journal of Obstetrics and Gynecology, 227*(5), 705–713.e9. https://doi.org/10.1016/j.ajog.2022.06.050

Gür, F., & Sohbet, R. (2017). Gaziantep İlinde El Beceri Kurslarına Gelen Kadınların Aile Planlamasina Yönelik, Bilgi Tutum ve Davranışları. *Medical Sciences, 12*(1), 10-21. https://doi.org/10.12739/NWSA.2017.12.1.1B0043

Güvercin, C. H., & Özan, S. (2019). Weak Ring of Family Planning Trainings: Patient Rights. *Journal of Basic and Clinical Health Sciences, 3*(2), 89-95. https://doi.org/10.30621/jbachs.2019.530

Türkiye 2018 Nüfus ve Sağlık Araştırması, Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü. (2019). 2018 Türkiye Nüfus ve Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, T.C. Cumhurbaşkanlığı Strateji ve Bütçe Başkanlığı ve TÜBİTAK, Ankara. https://www.sck.gov.tr/wp-content/uploads/2020/08/TNSA2018_ana_Rapor.pdf adresinden erişildi.

Jain, M., Caplan, Y., Ramesh, B. M., Isac, S., Anand, P., Engl, E., Halli, S., Kemp, H., Blanchard, J., Gothalwal, V., Namasivayam, V., Kumar, P., & Sgaier, S. K. (2021). Understanding Drivers of Family Planning in Rural Northern India: an Integrated Mixed-methods Approach. *Plos One, 16*(1), E0243854. https://doi.org/10.1371/journal.pone.0243854

Karaahmet, A. Y., & Bilgiç, F. Ş. (2022). Breastfeeding Success in the First 6 Months of Online Breastfeeding Counseling After Cesarean Delivery and Its Effect on Anthropometric Measurements of the Baby: a Randomized Controlled Study. *Rev Assoc Med Bras, 68*(10), 1434–1440. https://doi.org/10.1590/1806-9282.20220540

Kırıcı P., Kaplan S., Karaçor T., & Nacar M. (2020). Aile Planlaması Danışmanlık Hizmetinin Kadınların Kontraseptif Yöntem Tercihine Etkisi: Bir Tersiyer Merkez Deneyimi. *Jinekoloji Obstetrik ve Neonatoloji Tıp Dergisi,* 425-430. https://doi.org/10.38136/jgon.698866

Lau, Y., Htun, T. P., Tam, W. S., & Klainin-Yobas, P. (2016). Efficacy of E-technologies in Improving Breastfeeding Outcomes Among Perinatal Women: a Meta-analysis. *Maternal & Child Nutrition, 12*(3), 381–401. https://doi.org/10.1111/mcn.12202

Leight, J., Hensly, C., Chissano, M., Safran, E., Ali, L., Dustan, D., & Jamison, J. (2022). The Effects of Text Reminders on the Use of Family Planning Services: Evidence From a Randomised Controlled Trial in Urban Mozambique. Bmj Global Health, 7(4), E007862. https://doi.org/10.1136/bmjgh-2021-007862

Mccarthy, O., Ahamed, I., Kulaeva, F. et al. (2018) A Randomized Controlled Trial of an Intervention Delivered by Mobile Phone App Instant Messaging to Increase the Acceptability of Effective Contraception Among Young People in Tajikistan. *Reprod Health,* 15, 28. https://doi.org/10.1186/s12978-018-0473-z

Okunlola, D. A., Alawode, O. A., Awoleye, A. F., & Ilesanmi, B. B. (2023). Internet Use, Exposure to Digital Family Planning Messages, and Sexual Agency Among Partnered Women in Northern Nigeria: Implications for Digital Family Planning Intervention. Sexual and *Reproductive Health Matters, 31*(4), 2261681. https://doi.org/10.1080/26410397.2023.2261681

Omo-Aghoja, L. O., Omo-Aghoja, V. W., Aghoja, C. O., Okonofua, F. E., Aghedo, O., Umueri, C., Otayohwo, R., Feyi-waboso, P., Onowhakpor, E. A., & Inikori, K. A. (2009). Factors Associated With the Knowledge, Practice and Perceptions of Contraception in Rural Southern Nigeria. *Ghana Medical Journal, 43*(3), 115–121. https://doi.org/10.4314/gmj.v43i3.55326

Peterson, S. F., & Fok, W. K. (2019). Mobile Technology for Family Planning. *Current Opinion in Obstetrics & Gynecology,* *31*(6), 459–463. https://doi.org/10.1097/GCO.0000000000000578

Smith, C., Gold, J., Ngo, T. D., Sumpter, C., & Free, C. (2015). Mobile Phone-based Interventions for Improving Contraception Use. *The Cochrane Database of Systematic Reviews,* (6), Cd011159. https://doi.org/10.1002/14651858.CD011159.pub2

Sokmen, Y., Kaya Odabaş, R., & Karaçam, Z. (2022). The Use of Family Planning Methods and the Methods Used in Turkey: A Systematic Review and Meta-Analysis. *Journal of Education and Research in Nursing*. https://doi.org/10.5152/jern.2022.27037

The Lancet (2017). Family Planning: Accelerating the Way Ahead. Lancet (London, England), 390(10112), 2527. https://doi.org/10.1016/S0140-6736(17)33247-6

Ugaz, J. K. Correa, & E. DeGraw. (2021). Digital Health Tools to Enhance the Uptake and Use of Contraceptives and Family Planning Services: A Landscape Assessment. Washington, DC: Palladium, Health Policy Plus. 20.05.2023 tarihinde Digital Health Tools to Enhance the Uptake and Use of Contraceptives and Family Planning Services (usaid.gov) adresinden erişildi.

Van Der Wijden, C., & Manion, C. (2015). Lactational Amenorrhoea Method for Family Planning. The Cochrane Database of Systematic Reviews, Cd001329. https://doi.org/10.1002/14651858.CD001329.pub2

WHO. (2005). Report of WHO Technical Consultation on Birth Spacing. Geneva, Switzerland. layout birth spacing final 1-07bleeds.indd (who.int) adresinden erişildi.

WHO. (2010). Telemedicine: Opportunities and Developments in Member States: Report on the Second Global Survey on Ehealth. World Health Organization. 9789241564144_eng.pdf (who.int) adresinden erişildi.

WHO. (2015). Family Planning/Contraception. World Health Organization. 9789241565400-eng.pdf (who.int) adresinden erişildi.

Yıldız H. (2019). *Sağlıklı Geleceğe Yatırım: İnsan Haklarına Dayalı Kaliteli Aile Planlaması Hizmetleri*. Arslan Özkan H, Editör. Kadın Sağlığının Korunması ve Geliştirilmesinde Hemşirenin Rolü. 1. Baskı. Ankara: Türkiye Klinikleri; 54-62.