



Health Care for Women International

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/uhcw20

Evaluation of telemedicine for contraceptive counseling given to pregnant women during the COVID-19 pandemic: A randomized controlled trial

Rabia Saglam Aksut & Ozen Inam

To cite this article: Rabia Saglam Aksut & Ozen Inam (28 Jun 2024): Evaluation of telemedicine for contraceptive counseling given to pregnant women during the COVID-19 pandemic: A randomized controlled trial, Health Care for Women International, DOI: 10.1080/07399332.2024.2371386

To link to this article: https://doi.org/10.1080/07399332.2024.2371386

View supplementary material 🖸

| 4 | 1 | (| h |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Published online: 28 Jun 2024.

| Ŀ |
|---|

Submit your article to this journal 🗹

Article views: 41



View related articles 🗹



View Crossmark data 🗹



Check for updates

Evaluation of telemedicine for contraceptive counseling given to pregnant women during the COVID-19 pandemic: A randomized controlled trial

Rabia Saglam Aksut^a (D) and Ozen Inam^b (D)

^aFaculty of Health Sciences, Nursing Department, Fenerbahçe University, Istanbul, Turkey; ^bVocational School, Maltepe University, Istanbul, Turkey

ABSTRACT

In this study, we aimed to evaluate the impact of telemedicine for contraceptive counseling on knowledge levels and satisfaction with Family Planning Services. We collected data from 77 third-trimester pregnant women using a personal information form, Family Planning Knowledge Questionnaire, and the Satisfaction with Family Planning Services Scale and compared the data using chi-square test, Fisher's exact chi-square test, t-test for independent and dependent groups and Mann-Whitney U analysis. The experimental group participants (n=37)received two informative video visits for contraceptive counseling, while the women in the control group (n=40) received routine face-to-face Family Planning Services at their primary health care center. Participants in the experimental group showed a greater increase in knowledge levels and higher satisfaction with Family Planning Services than those in the control group (p < 0.05). In conclusion, we determined that telemedicine for contraceptive counseling is a promising option even beyond the pandemic.

ARTICLE HISTORY

Received 29 October 2023 Accepted 19 June 2024

Background

After the COVID-19 pandemic was declared a global health emergency, people were advised to avoid gatherings, stay home, and use social distance to reduce the spread of the virus (Ferreira-Filho & Machado, 2021). These measures, however, led to disruptions in the delivery and use of health care services. The World Health Organization (WHO) revealed in a recent survey that among 105 countries, 90% experienced health service disruptions due to the pandemic (WHO, 2020a). In addition, these measures

CONTACT Rabia Saglam Aksut 🖾 rabia.saglam@fbu.edu.tr 🖭 Fenerbahçe University, Faculty of Health Sciences, Nursing Department, 34758 Ataşehir, Istanbul, Turkey.

Supplemental data for this article can be accessed online at https://doi.org/10.1080/07399332.2024.2371386. Clinical Trials Registry Number: NCT05743309

© 2024 Taylor & Francis Group, LLC

also caused dilemmas for people needing sexual and reproductive health (SRH) services, including antenatal care and contraception (Ferreira-Filho & Machado, 2021). Researchers have reported that SRH matters and rights are one of the important issues that should not be neglected by health care providers during pandemics (Tang et al., 2020). However, researchers investigating changes in contraceptive visits in the USA during the COVID-19 pandemic concluded that there were considerable declines in contraceptive visits at the beginning of the pandemic and visit numbers remained below pre-pandemic levels through the end of 2020 (Steenland et al., 2021).

The contraceptive counseling services included in SRH services, like many preventive health care practices, were interrupted due to competing health priorities during the pandemic period (Steenland et al., 2021; Tang et al., 2020). However, authors have emphasized the importance of access to reproductive planning and contraception services during the COVID-19 pandemic (Ferreira-Filho & Machado, 2021), and determined that telemedicine practices were a promising option for providing contraceptive counseling even beyond the pandemic (Stifani et al., 2021a). The WHO defines telemedicine as "the delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies" (WHO, 2010). Researchers revealed that women who do not use contraceptives and wish to prevent pregnancy during the COVID-19 pandemic should receive reproductive counseling via telemedicine (Ferreira-Filho & Machado, 2021; Huang et al., 2022; Martinez et al., 2020; Stifani et al., 2021a; 2021b; 2022). For this reason, researchers have conducted various studies on the effectiveness of digital platforms to ensure the continuity of qualified contraceptive counseling services in conditions like pandemics where limited resources must be used judiciously and access to health care is limited due to social distancing. In this respect, many researchers have described telemedicine as a convenient and reliable alternative to in-person clinical visits (Babalola et al., 2019; Bates et al., 2018; Jain et al., 2019; Zuniga et al., 2020). In one study, researchers determined that 78.7% of midwives performed Family Planning (FP) consultations online (WhatsApp, SMS, video call and by phone) during the COVID-19 pandemic and concluded that FP counseling using online media tools would increase the quality of services (Herawati et al., 2020). Moreover, the authors of another study pointed out that health care providers were expected to make use of telehealth platforms to counsel clients on FP methods, inform them about service locations, monitor for medical eligibility, and help them handle contraceptive-related side effects to support the COVID-19 response (Mickler et al., 2021).

Having access to contraceptive counseling and the opportunity to choose from various contraceptive methods contributes to reproductive, maternal, and child health by promoting healthy timing and spacing of pregnancies. It also empowers women, young people, and couples to realize their fertility intentions and build healthier families and communities (Starbird et al., 2016). It is crucial that FP counseling services, which are an important part of prenatal care services, should not be interrupted under any circumstances, including global health crisis such as a pandemic. It is also extremely important for families to be able to decide on the FP method to be used in the postpartum period and to prevent unintended pregnancies occurred due to false beliefs and practices in the postpartum period when the woman who has just given birth is not ready for pregnancy both physiologically and psychologically. According to the WHO, counseling and guidance on the importance of FP and the contraceptive options offered to pregnant women should be included in antenatal care practices (WHO, 2013a). It was also reported that FP should be discussed throughout pregnancy, especially in the third trimester (WHO, 2013b) and that FP counseling services provided in the prenatal period contribute positively to the women's health and prevent unintended pregnancies (Singh et al., 2014).

Methods

Objective

Our primary aim in this study was to evaluate the effect of contraceptive counseling delivered *via* telemedicine on knowledge levels and satisfaction with FP services among 77 third-trimester pregnant women (37 in the experimental group, 40 in the control group).

Ethics

We conducted this study in accordance with the Helsinki Declaration of 2013 (World Medical Association Declaration of Helsinki, 2013) and obtained ethics committee approval from the Ethics Committee of Maltepe University (Date/Number: 25/12/2020/2020/17-15). In order to ensure voluntary participation, we verbally informed the participants in detail about the study, including the main purpose of the study, data collection procedures, and data protection principles, before obtaining their written consent. Prior to enrollment, we also informed all participants that their personal data would only be used for scientific purposes and would not be shared with any person or institution. This important information about protecting personal data was also explained in detail in the written consent forms, which were signed by all participants who volunteered to participate in the study.

Study design

We conducted a parallel group randomized controlled trial with a 1:1 allocation ratio. This two-group design with pretest and posttest is registered at ClinicalTrials.gov: number NCT05743309. We also used CONSORT reporting guidelines to ensure the completeness and accuracy of the study report (Schulz et al., 2010).

Setting and research participants

We carried out this study in a primary health care center between December 2020 and June 2021. The population of the study consisted of 97 third-trimester pregnant women registered in that primary health care center. Inclusion criteria were: being in the first trimester of pregnancy, being older than 18 years of age, and both partners not being sterilized. A total of 11 women who had a psychiatric diagnosis (n=5), declined to participate (n=2), or did not use a smartphone (n=4) were excluded from the study (Figure 1). We requested a list of the remaining 86 third-trimester pregnant women from the primary health care center where we conducted



Figure 1. Consolidated standards of reporting trials (CONSORT) diagram.

the study. The women were assigned numbers from 1 to 86 according to their order in the list, and the participants were randomly assigned by simple randomization (random number sequences created on www.random. org) at a 1:1 ratio. Only the participants were blinded after assignment to the intervention.

At the beginning of the study, power analysis to determine the sample size was performed using the medium effect size of Cohen's standard effect sizes (small effect size is 0.2, medium effect size is 0.5, and large effect size is 0.8) (Cohen, 1992). According to this analysis, the minimum sample size for each group was determined to be at least 21 pregnant women at an α significance level of 0.05 and 95% confidence interval to reach 80% power. We determined our expected dropout rate as 20% based on the relevant literature (Cramer et al., 2016; Wood et al., 2004). However, we felt the need to exceed this rate during enrollment for several reasons that we thought may contribute to a higher dropout rate or difficulty contacting the participants, such as the uncertainties affecting the delivery of many health care services during the pandemic and the uncommon nature of telemedicine in our country. Therefore, we decided to include all eligible pregnant women who agreed to participate in the study.

The 86 eligible pregnant women who were randomly assigned to experimental and control groups were invited to participate in the study. Pretest data were collected from 43 women in the control group but only 39 women in the experimental group after 4 women declined to participate due to concerns about privacy. Posttest data were collected from 37 women in the experimental group and 40 women in the control group, as we were unable to reach 2 women in the experimental group and 3 women in the control group for the second interview (Figure 1).

After completing data collection, we performed post hoc power analysis to determine the adequacy of the sample size of the study. In the power analysis, comparison of posttest total mean scores of the experimental and control group were used for the satisfaction with FP services variable. As a result of the analysis, we determined that the effect size of the study was 1.02 at a significance level of 0.05 and at a 95% confidence interval, and its power was 0.99. These values indicate that the sample is sufficient.

Intervention: Implementation of telemedicine for contraceptive counseling

A total of 37 third-trimester pregnant women in the experimental group attended individual contraceptive counseling video visits provided *via* the WhatsApp application. The other two women in this group could not be reached after the first interview. A handbook prepared by the researchers was used for contraceptive counseling, and the participants had the opportunity to see the researchers and their materials during these sessions.

The women received two video visits in which FP materials such as oral contraceptives, condoms, and intrauterine device (IUD) were shown to the participants so as to visualize the information, as well as a related handbook with pictures. Each individual session lasted approximately 50 min. During the sessions, we encouraged the women to ask any question about FP. Two weeks after the first interview, the contraceptive counseling video visit was repeated and posttest data were collected at the end of this second session. As there was a lockdown period due to the pandemic during the study, the participants' spouses, who were working from home, were included in the sessions as well when possible. The pregnant women in the control group received no intervention other than the routine FP services given face-to-face in the primary health care center at their second tetanus vaccination appointment in the 24th week of pregnancy.

Outcomes

Primary outcomes

Our primary outcomes were the proportion of participants reporting higher levels of knowledge about FP and satisfaction with FP services at the second week of the intervention. Knowledge levels were measured according to their answers to the open-ended questions. The responses were evaluated as follows for each question: "doesn't know", "partially knows" and "accurately knows". The knowledge level was accepted as high if participants accurately answered each question. Satisfaction with FP services was measured by the scale and a higher score was accepted as higher satisfaction.

Measurements and data collection

The data of the study were collected using Personal Information Form, Family Planning Knowledge Questionnaire, and the Satisfaction with Family Planning Services Scale.

Personal information form

This form consists of a total of 18 questions, 7 questions about the descriptive characteristics of pregnant women such as age, occupation, educational status, economic status, marriage age, duration of the marriage, and 11 questions about obstetric characteristics and FP methods.

Family Planning knowledge questionnaire

Since there is no valid and reliable measurement tool evaluating women's FP knowledge levels, knowledge levels about FP were evaluated with 10 openended questions prepared by the researchers according to the literature (Hanif et al., 2022; Jatlaoui et al., 2016; Kisindja et al., 2017; Rajan & Kandasamy, 2020; Salisbury et al., 2016; Wani et al., 2019). A group of experts including four family physicians and three nurse practitioners working in the field was consulted for their expert opinion before administering the questionnaire to the women. Participants were asked the open-ended questions at the end of the video visits and recorded their responses verbatim. While evaluating the responses, answers were grouped and scored as (1) "doesn't know", (2) "partially knows" and (3) "accurately knows". High scores indicate that the woman's knowledge level about FP is high.

Satisfaction with Family Planning Services Scale

This scale, developed by Erci in 2002, is a Likert type scale and consists of 37 items and 7 sub-dimensions (Erci, 2002). The sub-dimensions of the scale are as follows: Convenience, Cost, Coordination of services, Courtesy of the personnel, Health care information, Quality of service, and Comfort and effectiveness of the method. Responses are measured on a five-point Likert scale as such: very satisfied (scored 5), reasonably satisfied (4), neutral (3), reasonably dissatisfied (2) and very dissatisfied (1). The minimum total score is 37, and the maximum total score is 185. A score above 142 indicates women's satisfaction; over 111 indicates reasonable satisfaction, 75–110 expresses impartiality and below 74 expresses women's dissatisfaction with the services (Erci, 2002). In the study conducted by Erci (2002), the Cronbach alpha coefficient of the scale was found to be 0.86, and in this study, it was 0.946. Further, in this study, the Cronbach alpha coefficients of the sub-dimensions ranged from 0.74 to 0.96.

Pretest data

The first interview with the participants was performed face-to-face at the primary health care center, and during this interview, the pregnant women were given detailed information about the study. Pregnant women who agreed to participate in the study were asked to read and sign the informed consent form and fill out the personal information form, Family Planning Knowledge Questionnaire, and the Satisfaction with Family Planning Services Scale. In addition, we obtained the participants' contact information and informed them that contraceptive counseling would be carried out twice *via* video visits by using the WhatsApp application. Pretest data collection was completed with 39 women in the experimental group and 43 women in the control group.

Posttest data

We collected posttest data using the Family Planning Knowledge Questionnaire and the Satisfaction with Family Planning Services Scale. At the end of the second session of contraceptive counseling, the posttest data of the experimental group was collected from 37 pregnant women *via* telephone. Women in the control group were telephoned two weeks after the first interview and posttest data collection of the control group was completed with 40 pregnant women.

Statistical analysis

We analyzed the study data with the SPSS for Windows 22.0 package program. In the analysis of the data, numbers, percentages, minimum and maximum values, mean and standard deviations, as well as Kurtosis and Skewness coefficients, were used to determine the normality distribution of the data. In the comparison of paired groups, chi-square test, Fisher's exact chi-square test, t-tests for independent and dependent groups and Mann-Whitney U analysis were used. In the intra group comparisons of paired groups, the t-test was performed in dependent groups for normally distributed measurements. The Cronbach alpha coefficient was used to determine the internal validity coefficient of the scale.

Results

Homogeneity test in descriptive and obstetric characteristics and Family Planning history of pregnant women

The mean age of the pregnant women in the experimental group was 27.76 ± 5.63 years, 59.5% were housewives and 45.9% had a university or higher education level. On the other hand, 67.5% of the participants in the control group were housewives, 42.5% had a university or higher education level, and the mean age was 28.48 ± 4.17 years. In addition, experimental and control groups were similar in terms of descriptive characteristics (p > 0.05) (Table 1).

As seen in Table 2, 67.6% of the women in the experimental group did not have a miscarriage history, and the mean age at first pregnancy was 24.38 ± 2.90 years. Further, more than half of them (62.2%) stated that they knew FP methods, 29.7% of them indicated that they used condom before getting pregnant, and 65.7% of them decided on the last method used together with their spouses. On the other hand, 95% of the women in the control group did not have a history of miscarriage, and their first pregnancy age was 24.38 ± 2.90 years. Except for the miscarriage history (p < 0.05), all other obstetric characteristics and FP histories were similar in the experimental and control groups (p > 0.05) (Table 2).

| | | | Experin | nental group | Contr | ol group | Test and | |
|-------------------------|------------|------------------|---------|---------------|------------|--------------|---------------------------|--|
| | | | n | % | n | % | significance | |
| Occupation | Housewife | · · · | 22 | 59.5 | 27 | 67.5 | x ² =12.679* | |
| | Teacher | | 4 | 10.8 | - | - | p = 0.123 | |
| | Banker | | 3 | 8.1 | 2 | 5.0 | | |
| | Accountan | t | 3 | 8.1 | 7 | 17.5 | | |
| | Academic | | 2 | 5.4 | - | - | | |
| | Journalist | | 2 | 5.4 | - | - | | |
| | Self-emplo | oyed | 1 | 2.7 | 1 | 2.5 | | |
| | Manager | • | - | - | 2 | 5.0 | | |
| | Worker | | - | - | 1 | 2.5 | | |
| Economic status | Income ec | ual to expenses | 27 | 73.0 | 29 | 72.5 | x ² =0.400* | |
| | Income m | ore than | 5 | 13.5 | 7 | 17.5 | p=0.819 | |
| | expenses | | - | 12 5 | | 10.0 | | |
| | Income les | ss than expenses | 5 | 13.5 | 4 | 10.0 |] = = = = = = = | |
| Educational | Primary | | 6 | 16.2 | / | 17.5 | $x^2 = 5.208^*$ | |
| status | Secondary | | 3 | 8.1 | 10 | 25.0 | p = 0.157 | |
| | High Scho | ol | 11 | 29.7 | 6 | 15.0 | | |
| | University | or higher | 17 | 45.9 | 17 | 42.5 | | |
| Chronic disease | Yes | | - | - | 4 | 10.0 | p=0.116** | |
| | No | | 37 | 100 | 36 | 90.0 | | |
| If yes, chronic | Asthma | | - | - | 2 | 50.0 | - | |
| disease | Diabetes | | - | - | 1 | 25.0 | | |
| | Thalassem | ia | - | - | 1 | 25.0 | | |
| Continuous Variables | n | $Mean\pmSD$ | n | Mean ± | SD | Significance | | |
| Age | 37 | 27.76±5.63 | 40 | 28.48±4 | 28.48±4.17 | | .000***, p=0.951 | |
| Marriage Age | 37 | 23.95 ± 3.40 | 40 | 23.25 ± 2 | .36 | U = 669 | 0.000***, <i>p</i> =0.466 | |
| Duration of Marriage | 37 | 4.43±3.51 | 40 | 5.45 ± 4 | .53 | U=647 | 2.500***, p=0.341 | |

| Table 1. Comparison of | descriptive | characteristics | of | pregnant | women | in | experimental | and |
|-----------------------------|-------------|-----------------|----|----------|-------|----|--------------|-----|
| control groups $(n = 77)$. | | | | | | | | |

*Chi-square test.

**Fisher's exact chi-square test.

***Mann Whitney U analysis.

Effect of telemedicine for contraceptive counseling on the knowledge levels of third-trimester pregnant women and Satisfaction with Family Planning Services

When the pretest mean scores of the pregnant women regarding the FP knowledge levels were examined; in the pretest, it was determined that the difference between the experimental and control group was not statistically significant (p > 0.05), except for the "Advantages and disadvantages of the FP method to be used in the postpartum period" statement (p < 0.05). However, when the responses given in the posttest were examined, it was found that the difference between the experimental and control group was statistically significant in all responses (p < 0.05). In addition, when the percentiles of the responses given in the pretest and posttest were evaluated, it was obvious that the knowledge level of the pregnant women in the experimental group increased more in the posttest than the pregnant women in the control group who received only routine FP services (Table 3).

In the pretest measurements, the difference between the experimental and control group was found to be statistically significant in terms of the

| | | | Experii | mental group | Cont | rol group | Test and | |
|---------------------------|-----------|------------------|---------|-----------------|------|----------------------|-------------------------|--|
| | | | n | % | n | % | significance | |
| Miscarriage history | Yes | | 12 | 32.4 | 2 | 5.0 | x ² =9.723* | |
| | No | | 25 | 67.6 | 38 | 95.0 | p= 0.002 | |
| Curettage history | Yes | | - | - | 1 | 2.5 | p=1.000** | |
| | No | | 37 | 100 | 39 | 97.5 | | |
| Unintended | Yes | | 6 | 16.2 | 11 | 27.5 | x ² =1.423* | |
| pregnancy | No | | 31 | 83.8 | 29 | 72.5 | p=0.233 | |
| Way of unintended | Birth | | 3 | 60.0 | 10 | 90.9 | x ² =5.259* | |
| pregnancy | Spontan | eous miscarriage | 2 | 40.0 | - | - | p = 0.072 | |
| termination | Curettag | e | - | - | 1 | 9.1 | | |
| Being informed | Yes | | 23 | 62.2 | 20 | 50.0 | x ² =1.153* | |
| about FP methods | No | | 14 | 37.8 | 20 | 50.0 | p = 0.283 | |
| before | | | | | | | | |
| FP method used | Condom | | 11 | 29.7 | 12 | 30.0 | $x^2 = 5.674^*$ | |
| before getting | Oral con | traceptive | 10 | 27.0 | 8 | 20.0 | p=0.461 | |
| pregnant | Injectior | | 9 | 24.3 | 14 | 35.0 | | |
| | Breast-fe | eding | 2 | 5.4 | - | - | | |
| | Withdray | wal | 2 | 5.4 | - | - | | |
| | Intrauter | ine Device | 1 | 2.7 | 2 | 5.0 | | |
| | Not usin | g | 2 | 5.4 | 2 | 5.0 | | |
| Person deciding on | Partners | together | 23 | 65.7 | 23 | 63.9 | x ² =1.236* | |
| the most recent | Woman | | 7 | 20.0 | 9 | 25.0 | p=0.744 | |
| method | Man | | 4 | 11.4 | 4 | 11.1 | | |
| | Family e | lders | 1 | 2.9 | - | - | | |
| | Expe | rimental Group | | Control Group | c | | | |
| Continuous Variables | n | $Mean\pmSD$ | n | Mean | ±SD | Test a | nd Significance | |
| Age of first | 37 | 25.65 ± 3.90 | 40 | 24.38± | 2.90 | t=1.615* | ***, <i>p</i> =0.111 | |
| Number of pregnancies | 37 | 1.89±1.26 | 40 | 1.88 ± 1.28 | | U=738.5 | 00****, <i>p</i> =0.897 | |
| Number of births | 37 | 0.65 ± 0.75 | 40 | 0.98±1.07 | | t=-1.532 | ***, p=0.130 | |
| Number of living children | 37 | 0.65 ± 0.75 | 40 | 0.93± | 1.00 | t=-1.364***, p=0.177 | | |

| Table | 2. | Comparison | of | obstetric | characteristics | and | Family | Planning | history | of | pregnant |
|-------|------|------------|----|-----------|-----------------|-----|--------|----------|---------|----|----------|
| womer | ר) ו | n = 77). | | | | | | | | | |

*Chi-square test.

**Fisher's exact chi-square test.

***t-test in independent groups.

****Mann Whitney U analysis.

mean scores of the Comfort and effectiveness of the method sub-dimension of the Satisfaction with Family Planning Services Scale (p < 0.05), however, the difference between the two groups was not statistically significant in terms of other sub-dimensions and the total mean scores (p > 0.05). When the mean scores obtained from the sub-dimensions of the scale in the posttest were examined; the difference between the experimental and control group was statistically significant in terms of Convenience, Coordination of services, Health care information, Quality of service and Comfort and effectiveness of the method sub-dimensions mean scores and total score averages (p < 0.05), and the mean scores of pregnant women in the experimental group were found to be higher (Table 4).

The difference between the pretest and posttest measurements of the experimental group was statistically significant in terms of the Convenience, Cost, Coordination of services, Health care information, Quality of service,

| | | | Pretes | | Posttest | | | | |
|----------------------|---|----------|------------------------|----------|--------------|----------------------|------------------------------|------------|----------|
| Questions evaluatin | g the FP | Experime | ntal group | Contr | ol group | Experime | ental group | Contr | ol group |
| Knowledge level | | n | % | n | % | n | % | n | % |
| Definition of FP | Accurately knows | 3 | 8.1 | 5 | 12.5 | 31 | 83.8 | 5 | 12.5 |
| | Doesn't know | 18 | 48.6 | 23 | 57.5 | - | - | 19 | 47.5 |
| | Partially knows | 16 | 43.2 | 12 | 30.0 | 6 | 16.2 | 16 | 40.0 |
| Test* and Significan | ce | | $x^2 = 1.56$ | 57 | | | $x^2 = 42.2$ | 71 | |
| | | | p = 0.45 | 57 | | | p= 0.0 | 00 | |
| Goals of FP | Accurately knows | 4 | 10.8 | 5 | 12.5 | 30 | 81.1 | 3 | 7.5 |
| | Doesn't know | 17 | 45.9 | 18 | 45.0 | - | - | 19 | 47.5 |
| | Partially knows | 16 | 43.2 | 17 | 42.5 | 7 | 18.9 | 18 | 45.0 |
| Test* and Significan | ce | | $x^2 = 0.05$ | 53 | | | $x^2 = 45.8$ | 84 | |
| | | - | p = 0.97 | 74 | | | p= 0.0 | 00 | |
| Benefits of FP | Accurately knows | 3 | 8.1 | 8 | 20.0 | 28 | 75.7 | 8 | 20.0 |
| | Doesn't know | 18 | 48.6 | 20 | 50.0 | 2 | 5.4 | 17 | 42.5 |
| | Partially knows | 16 | 43.2 | 12 | 30.0 | 7 | 18.9 | 15 | 37.5 |
| lest* and Significan | ce | | $x^2 = 2.83$ | 37 | | | x ² =25.7 | 85 | |
| | | , | p = 0.24 | 42 | | | p=0.0 | 00 _ | |
| The period of | Accurately knows | 6 | 16.2 | 9 | 22.5 | 20 | 54.1 | | 17.5 |
| ovulation when | Doesn't know | 28 | 75.7 | 27 | 67.5 | 6 | 16.2 | 24 | 60.0 |
| pregnancy is most | Partially knows | 3 | 8.1 | 4 | 10.0 | 11 | 29.7 | 9 | 22.5 |
| likely to occur | | | 2.0.0 | | | | 2 47 4 | c 0 | |
| lest* and Significan | ce | | X ² =0.64 | | | x ² =17.1 | 68 | | |
| What to do often | Accurately knows | 2 | p = 0.72 | 24 | 22 F | 16 | p = 0.0 | 00 | 15.0 |
| what to do after | Accurately knows | 21 | 0.1 02 0 | 9 77 | 22.5 67 E | 10 | 43.2 | 24 | 15.0 |
| intercourse | Doesn't know | 21 | 03.0 | 2/ | 10.0 | 14 | 57.0 19.0 | 54 | 65.0 |
| Tost* and Significan | Fallially KIIOWS | 2 | 0.1 | 17 4 | 10.0 | / | 10.9 v ² _10.7 | - | - |
| lest" and significan | Le la | | $x^{-}=0.10$ | J7 51 | | | x=19.7 | 92 | |
| Modern FP | Accurately knows | 7 | μ=0.1: 18.0 | 7 | 175 | 30 | <i>p</i> = 0.0 | 5 | 12.5 |
| methods | Doesn't know | 15 | 10.5 | 1/ | 35.0 | 52 | - 00.5 | 20 | 50.0 |
| methous | Partially knows | 15 | 40.5 | 19 | 47.5 | 5 | 13 5 | 15 | 37.5 |
| Test* and Significan | | 15 | v ² -0 38 | 29 | 47.5 | 5 | $x^2 - 44.6$ | 54 | 57.5 |
| lest und significan | | | n = 0.83 | 23 | | | n = 0.0 | 00 | |
| Natural FP | Accurately knows | 3 | <i>p</i> = 0.02 8.1 | 3 | 7.5 | 27 | 73.0 | 10 | 25.0 |
| methods | Doesn't know | 32 | 86.5 | 27 | 67.5 | 5 | 13.5 | 26 | 65.0 |
| | Partially knows | 2 | 5.4 | 10 | 25.0 | 5 | 13.5 | 4 | 10.0 |
| Test* and Significan | ce | - | $x^2 = 5.64$ | 49 | | - | $x^2 = 22.0$ | 64 | |
| ···· | | | p = 0.05 | | | p = 0.0 | 00 | | |
| Traditional FP | Accurately knows | 9 | 24.3 | 16 | 40.0 | 32 | 86.5 | 15 | 37.5 |
| methods | Doesn't know | 24 | 64.9 | 18 | 45.0 | 3 | 8.1 | 22 | 55.0 |
| | Partially knows | 4 | 10.8 | 6 | 15.0 | 2 | 5.4 | 3 | 7.5 |
| Test* and Significan | ce | | x ² =3.1 | 0 | | | x ² =20.7 | 03 | |
| | | | $p = 0.2^{2}$ | 12 | | | p= 0.0 | 00 | |
| Advantages and | Accurately | - | - | 6 | 15.0 | 27 | 73.0 | 3 | 7.5 |
| disadvantages of FF | knows | | | | | | | | |
| method to be used | in Doesn't know | 16 | 43.2 | 27 | 67.5 | - | - | 27 | 67.5 |
| the postpartum per | iod Partially | 21 | 56.8 | 7 | 17.5 | 10 | 27.0 | 10 | 25.0 |
| | knows | | | | | | | | |
| Test* and Significan | ce | | $x^2 = 15.7$ | 21 | | | x ² =46.1 | 53 | |
| | | | p= 0.0 | 00 | | | p= 0.0 | 00 | |
| FP method protecti | ng Accurately | 18 | 48.6 | 10 | 25.0 | 37 | 100.0 | 16 | 40.0 |
| against sexually | knows | | | | | | | | |
| transmitted disease | s as Doesn't know | 19 | 51.4 | 28 | 70.0 | - | - | 24 | 60.0 |
| well as unintended | Partially | - | - | 2 | 5.0 | - | - | - | - |
| pregnancies | knows | | | | | | | | |
| lest* and Significan | ce | | $x^2 = 5.90$ | J1 | | | $x^2 = 32.2$ | 53 | |
| | | | p = 0.05 | 52 | | | p=0.0 | 00 | |

Table 3. Comparison of pretest-posttest mean scores regarding Family Planning knowledge levels of pregnant women in the experimental and control groups (n = 77).

*Chi-square test.

Comfort and effectiveness of the method sub-dimensions and the total mean scores (p < 0.05). In the control group, while the difference between the pretest and posttest measurements was statistically significant in terms

of the mean scores of the Cost, Coordination of services, Health care information and Quality of service sub-dimensions (p < 0.05), the difference was not statistically significant in terms of other sub-dimensions and the total mean scores of the scale (p > 0.05) (Table 4).

Discussion

The COVID-19 pandemic brought into focus the possibility of using telemedicine to maintain the continuity of health-promoting activities,

| | | Experimental group $(n=37)$ | Control group (n=40) | |
|--------------------|-------------------------------|-----------------------------|-----------------------------|----------------------------------|
| Sub-dimensions | | Mean ± SD | $Mean \pm SD$ | Test and significance |
| Convenience | Pretest | 17.35±2.93 | 16.38 ± 3.39 | t=1.348*, p=0.182 |
| | Posttest | 18.27 ± 1.92 | 15.80 ± 3.61 | t=3.785*, p= 0.000 |
| | Test and Significance | t=-2.344**, | t = 1.553**, | |
| | | p= 0.025 | p=0.128 | |
| Cost | Pretest | 14.73 ± 3.26 | 13.78 ± 3.47 | t=1.242*, p=0.218 |
| | Posttest | 16.95 ± 2.12 | 15.45 ± 4.27 | t=1.970*, p=0.154 |
| | Test and Significance | t=-4.592**, | t=-3.512**, | |
| | | p= 0.000 | p= 0.001 | |
| Coordination of | Pretest | 16.76 ± 2.50 | 17.15 ± 3.53 | U = 600.500***, |
| services | | | | p=0.150 |
| | Posttest | 19.59 ± 0.86 | 17.85 ± 3.25 | U = 484.500***, |
| | | | | p= 0.002 |
| | Test and Significance | t=-6.193**, | U=-2.261***, | • |
| | - | p= 0.000 | p= 0.024 | |
| Courtesy of the | Pretest | 31.38±4.47 | $.31.93 \pm 5.34$ | U = 672.500***, |
| personnel | | | | p=0.465 |
| | Posttest | 34.41 ± 1.85 | 32.33 ± 5.82 | $U = 484.500^{***}$ |
| | | | | p = 0.161 |
| | Test and Significance | U=-3.627***, | U=-1.434***, | P · · · · |
| | ····· · · · · · | p = 0.100 | p = 0.152 | |
| Health-care | Pretest | 14.65 ± 3.21 | 14.95 ± 4.77 | $t=-0.327^*$, $p=0.744$ |
| information | Posttest | 19.14 ± 1.95 | 16.88 ± 4.73 | $U = 529.500^{***}$. |
| | | | | p= 0.010 |
| | Test and Significance | U=-4.402***. | U=-2.704***. | P |
| | ···· | p= 0.000 | p= 0.007 | |
| Quality of service | Pretest | 44.78 ± 5.14 | 43.63 + 7.97 | $U = 718.000^{***}$ |
| Quality of service | | | 10100 = 7107 | n = 0.821 |
| | Posttest | 48 35 + 2 53 | 41 18 + 8 27 | $U = 309\ 000^{***}$ |
| | lostest | 10.55 ± 2.55 | 11.10 ± 0.27 | n=0.000 |
| | Test and Significance | U=-3.978*** | U=-3.040***. | p cicco |
| | ···· | n=0.000 | n=0.002 | |
| Comfort and | Pretest | 1614 + 332 | 1448 + 326 | t=2.214* n= 0.030 |
| effectiveness of | Posttest | 18 16 + 2 37 | 15.15 ± 3.20 | $t = 4.371^{*}$ n=0.000 |
| the method | Test and Significance | U=-3 565*** | t=-1 684** | t 1.5/1 / p 0.000 |
| the method | lest and significance | n= 0 000 | n = 0.100 | |
| Total | Pretest | 15578 + 1586 | p = 0.100 152 28 + 24 47 | 11 - 729 000*** |
| lotal | Tretest | 155.70 ± 15.00 | 152.20 ± 24.47 | n = 0.011 |
| | Posttest | 174 86 + 7 71 | 154 63 + 26 54 | $\mu = 0.511$ II = 335,500*** |
| | , outcot | 17 1.00 ± 7.71 | 137.03 ± 20.34 | n= 0 000 |
| | Test and Significance | t=-7 383** | U=-0 771*** | p=0.000 |
| | iest and significance | n= 0 000 | n = 0.441 | |
| | | p=0.000 | p=0.141 | |

Table 4. Comparison of pretest-posttest mean scores of the satisfaction with Family Planning Services Scale of pregnant women in the experimental and control group (n = 77).

*t test in independent groups.

**t test in dependent groups.

***Mann Whitney U analysis.

especially in matters requiring counseling. The WHO, American College of Obstetricians and Gynecologists, Society of Family Planning, and other national and international organizations emphasized that SRH services are essential and nondeferrable and must be prioritized as part of an organized COVID-19 response (The American College of Obstetricians & Gynecologists, 2020; WHO, 2020b). Researchers in Indonesia determined that there was a decrease in FP services during the pandemic and that health professionals providing these services were expected to utilize online media (Herawati et al., 2020). As part of the COVID-19 response, telehealth platforms were regarded as a high-impact practice for enhancing the delivery of health and FP services (High Impact Practices in Family Planning (HIPs), 2017; Mickler et al., 2021).

The WHO also recommended the development of innovative strategies to enable widespread access to information regarding FP and contraceptive methods during the pandemic, including the use of telemedicine, either through conventional calls or video calls (WHO, 2020c). Researchers have emphasized the fact that contraception initiation and continuation can be accomplished via telemedicine for most people in the context of the COVID-19 pandemic (Sharma et al., 2020), and that the pandemic can be regarded as an opportunity to remove the barriers and provide access to care for all populations via the spreading use of telemedicine including telephone visits (Cohen et al., 2020). Similarly, in the present study we found that contraceptive counseling given via telemedicine had a significant effect on the knowledge levels of pregnant women regarding FP and their satisfaction with FP services compared to routine face-to-face FP counseling services provided at the primary health care center. In a randomized controlled trial, it was found that using mobile phones for health was a promising method for increasing FP knowledge (Johnson et al., 2017). In another study, researchers reported increased contraceptive knowledge after young people were provided contraception information via a mobile phone application for reproductive health (Vahdat et al., 2013). In a qualitative study conducted to engage men to support postpartum FP among couples, participants stated that communicating with a nurse about FP could reduce misperceptions about FP and improve contraceptive access and continuation (Harrington et al., 2019). In another randomized controlled study conducted with young women in Palestine using the mobile phone text message method, it was determined that the women in the experimental group found at least one contraceptive method acceptable and, similar to our study, their knowledge scores were higher than those of the control group (McCarthy et al., 2019).

In this study, we conducted our video visits with third-trimester pregnant women, and targeting this group is one of the important aspects of our study. Our aim in choosing third-trimester pregnant women was to prevent unintended pregnancies that they may encounter due to some reasons such as lack of knowledge, wrong beliefs and practices, or inability to reach contraceptive methods in the postpartum period. The WHO emphasizes that contraceptive counseling should be among the services provided during the antenatal period (WHO, 2013a) and that FP should be discussed throughout pregnancy, especially in the third trimester (WHO, 2013b). FP counseling provided in the prenatal period contributes positively to women's health and prevents unintended pregnancies that may occur in the postpartum period (Singh et al., 2014). In a study conducted in the USA, it was recommended that FP counseling services provided with telehealth, which is planned within the scope of prenatal care applications for pregnant women during the COVID-19 pandemic, should be performed through 2 or 3 virtual visits on 29-35th weeks of pregnancy (Aziz et al., 2020).

We determined that there were statistically significant differences between groups in pretest measurements in our trial (p < 0.05). One of them was related to the knowledge levels of pregnant women, and we found that while more than half of the women in the control group (67.5%) did not know the advantages and disadvantages of the FP method to be used in the postpartum period, 56.8% of experimental group participants were partially aware of these advantages and disadvantages (Table 3). In our study, even if there was no statistical difference between the groups in terms of education level, there was a higher proportion of women in the experimental group with high school and university or higher education level than in the control group. Considering the positive effect of education level on FP usage (Singh et al., 2016), the difference between the groups in the pretest measurements may stem from this difference in education level. Another statistically significant difference between groups was found in the pretest measurements of the mean scores of the 'Comfort and effectiveness of the method' sub-dimension of the Satisfaction with Family Planning Services Scale (p < 0.05) (Table 4). This difference may be due to the fact that women in the control group reported more unintended pregnancy (27.5%) than experimental group participants (16.2%), even if there was no statistically significant difference between groups (p > 0.05) (Table 2), resulting in less satisfaction with the method used.

Our study had some limitations. One of them is that we conducted this study in a single center because of the measures taken against the pandemic. Another limitation is that the preexisting concept of telemedicine came to the forefront with the pandemic, but telemedicine was a new concept for the participants, and therefore, some of the participants who did not want to participate in the study mostly stated that they did not want to participate in the study due to their concerns about the violation of privacy.

Despite these limitations, we believe that this study adds new and essential information to the literature on telemedicine for contraceptive counseling given through video visits because it was found that these virtual visits contributed to the knowledge levels of pregnant women and to the perceived satisfaction from FP services. Although the COVID-19 pandemic has been devastating and tragic for all countries, it has also forced us to review our health care delivery strategies. The fact that telemedicine is a promising option for contraceptive counseling even beyond the pandemic is one of the most important lessons that we should learn from this COVID-19 process. Since family planning requires higher privacy for women or couples, however, some people may turn to the internet for information on this subject instead of seeking help from a health professional. For this reason, health care providers should inform women and couples that they should receive these services, whether face-to-face or online, only from health care professionals, as the information available on the internet might cause confusion and lead to unintended pregnancies due to misunderstanding or misuse of contraceptive methods. Furthermore, taking into account the randomized controlled studies in the literature, it can be suggested that there is a need for more randomized controlled studies in which the telemedicine for contraceptive counseling using video visits method is used and the effect of this method on the knowledge levels of pregnant women about FP and their satisfaction with FP services are examined.

Acknowledgements

The authors would like to thank the study participants for their collaboration and to all health professionals working in the primary health care center where the study was conducted.

Disclosure statement

The authors declare that there is no competing financial interest or personal relationship that could have appeared to influence the work reported in this paper.

Funding

We did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

ORCID

Rabia Saglam Aksut (b) http://orcid.org/0000-0002-8208-6113 Ozen Inam (b) http://orcid.org/0000-0002-6463-2432

Data-sharing statement

The data are available from the corresponding author upon reasonable request.

References

- Aziz, A., Zork, N., Aubey, J. J., Baptiste, C. D., D'Alton, M. E., Emeruwa, U. N., Fuchs, K. M., Goffman, D., Gyamfi-Bannerman, C., Haythe, J. H., LaSala, A. P., Madden, N., Miller, E. C., Miller, R. S., Monk, C., Moroz, L., Ona, S., Ring, L. E., Sheen, J. J., ... Friedman, A. M. (2020). Telehealth for high-risk pregnancies in the setting of the COVID-19 pandemic. *American Journal of Perinatology*, 37(8), 800-808. https://doi. org/10.1055/s-0040-1712121
- Babalola, S., Loehr, C., Oyenubi, O., Akiode, A., & Mobley, A. (2019). Efficacy of a digital health tool on contraceptive ideation and use in Nigeria: Results of a cluster-randomized control trial. *Global Health, Science and Practice*, 7(2), 273–288. https://doi. org/10.9745/ghsp-d-19-00066
- Bates, L. A., Hicks, J. P., Walley, J., & Robinson, E. (2018). Evaluating the impact of Marie Stopes International's digital family planning counselling application on the uptake of long-acting and permanent methods of contraception in Vietnam and Ethiopia: A study protocol for a multi-country cluster randomised controlled trial. *Trials*, 19(1), 420. https://doi.org/10.1186/s13063-018-2815-0
- Cohen, J. (1992). Statistical power analysis. Current Directions in Psychological Science, 1(3), 98-101. https://doi.org/10.1111/1467-8721.ep10768783
- Cohen, M. A., Powell, A. M., Coleman, J. S., Keller, J. M., Livingston, A., & Anderson, J. R. (2020). Special ambulatory gynecologic considerations in the era of coronavirus disease 2019 (COVID-19) and implications for future practice. *American Journal of Obstetrics and Gynecology*, 223(3), 372–378. https://doi.org/10.1016/j.ajog.2020. 06.006
- Cramer, H., Haller, H., Dobos, G., & Lauche, R. (2016). A systematic review and meta-analysis estimating the expected dropout rates in randomized controlled trials on yoga interventions. *Evidence-Based Complementary and Alternative Medicine: ECAM*, 2016, 5859729–5859727. https://doi.org/10.1155/2016/5859729
- Erci, B. (2002). Turkish women's satisfaction with family planning services. The European Journal of Contraception & Reproductive Health Care: The Official Journal of the European Society of Contraception, 7(4), 227–233. https://doi.org/10.1080/ejc.7.4.227.233
- Ferreira-Filho, E., & Machado, R. (2021). Contraceptive counseling during the pandemic: Practical guidelines: Number 7-July 2021. *Revista Brasileira De Ginecologia e Obstetricia: Revista Da Federacao Brasileira Das Sociedades De Ginecologia e Obstetricia*, 43(7), 579–584. https://doi.org/10.1055/s-0041-1735185
- Hanif, A., Naing, N. N., Wan-Arfah, N., & Ashraf, T. (2022). Development and validation of a questionnaire about knowledge of birth spacing among females. *Science International*, 34(6), 589–594.
- Harrington, E. K., McCoy, E. E., Drake, A. L., Matemo, D., John-Stewart, G., Kinuthia, J., & Unger, J. A. (2019). Engaging men in an mHealth approach to support postpartum family planning among couples in Kenya: A qualitative study. *Reproductive Health*, 16(1), 17. https://doi.org/10.1186/s12978-019-0669-x
- Herawati, D., Rosyada, D. F., Pratiwi, R. D., & Wigati, E. N. (2020). Family planning services by midwifery of private midwifery practice in Yogyakarta during the pandemic period of Covid-19. *Jurnal Ilmu Kesehatan Masyarakat*, 11(2), 123–135. https://doi. org/10.26553/jikm.2020.11.2.123-135

- High Impact Practices in Family Planning (HIPs). (2017). *Digital Health: Strengthening Family Planning Systems*. Washington, DC: U.S. Agency for International Development. Retrieved March 10, 2023, from https://www.fphighimpactpractices.org/briefs/digital-health-systems/
- Huang, I., Delay, R., Boulware, A., McHugh, A., Wong, Z. J., Whitaker, A. K., Stulberg, D., & Hasselbacher, L. (2022). Telehealth for contraceptive care: Lessons from staff and clinicians for improving implementation and sustainability in Illinois. *Contraception: X*, 4, 100083. https://doi.org/10.1016/j.conx.2022.100083
- Jain, T., Schwarz, E. B., & Mehrotra, A. (2019). A study of telecontraception. The New England Journal of Medicine, 381(13), 1287–1288. https://doi.org/10.1056/nejmc1907545
- Jatlaoui, T. C., Cordes, S., Goedken, P., Jamieson, D. J., & Cwiak, C. (2016). Family planning knowledge, attitudes and practices among bariatric health care providers. *Contraception*, 93(5), 455–462. https://doi.org/10.1016/j.contraception.2015.12.016
- Johnson, D., Juras, R., Riley, P., Chatterji, M., Sloane, P., Choi, S. K., & Johns, B. A. (2017). A randomized controlled trial of the impact of a Family Planning mHealth service on knowledge and use of contraception. *Contraception*, 95(1), 90–97. https:// doi.org/10.1016/j.contraception.2016.07.009
- Kisindja, R. M., Kimona, C., Etoy, M., Dorme, F., & Benfield, N. (2017). Family planning knowledge and use among women in camps for internally displaced people in the Democratic Republic of the Congo. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics*, 138(3), 256–260. https://doi.org/10.1002/ijgo.12220
- Martinez, K. A., Rastogi, R., Lipold, L., & Rothberg, M. B. (2020). Response to requests for contraception in one direct-to-consumer telemedicine service. *Contraception*, 101(5), 350–352. https://doi.org/10.1016/j.contraception.2020.01.017
- McCarthy, O. L., Zghayyer, H., Stavridis, A., Adada, S., Ahamed, I., Leurent, B., Edwards, P., Palmer, M., & Free, C. (2019). A randomized controlled trial of an intervention delivered by mobile phone text message to increase the acceptability of effective contraception among young women in Palestine. *Trials*, 20(1), 228. https://doi.org/10.1186/s13063-019-3297-4
- Mickler, A. K., Carrasco, M. A., Raney, L., Sharma, V., May, A. V., & Greaney, J. (2021). Applications of the high impact practices in family planning during COVID-19. Sexual and Reproductive Health Matters, 29(1), 1881210–1881217. https://doi.org/10.1080/264 10397.2021.1881210
- Rajan, V., & Kandasamy, S. (2020). Awareness regarding birth spacing family planning methods among antenatal mothers. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 10(1), 93–96. https://doi.org/10.18203/2320-1770.ijrcog20205405
- Salisbury, P., Hall, L., Kulkus, S., Paw, M. K., Tun, N. W., Min, A. M., Chotivanich, K., Srikanok, S., Ontuwong, P., Sirinonthachai, S., Nosten, F., Somerset, S., & McGready, R. (2016). Family planning knowledge, attitudes and practices in refugee and migrant pregnant and post-partum women on the Thailand-Myanmar border - a mixed methods study. *Reproductive Health*, 13(1), 94. https://doi.org/10.1186/s12978-016-0212-2
- Schulz, K. F., Altman, D. G., & Moher, D, CONSORT Group. (2010). CONSORT 2010 statement: Updated guidelines for reporting parallel group randomised trials. *BMJ* (*Clinical Research Ed.*), 340, c332-c332. https://doi.org/10.1136/bmj.c332
- Sharma, K. A., Zangmo, R., Kumari, A., Roy, K. K., & Bharti, J. (2020). Family planning and abortion services in COVID 19 pandemic. *Taiwanese Journal of Obstetrics & Gynecology*, 59(6), 808-811. https://doi.org/10.1016/j.tjog.2020.09.005
- Singh, A., Singh, K. K., & Verma, P. (2016). Knowledge, attitude and practice GAP in family planning usage: An analysis of selected cities of Uttar Pradesh. *Contraception* and Reproductive Medicine, 1(1), 20. https://doi.org/10.1186/s40834-016-0031-4

- Singh, S., Darroch, J. E., & Ashford, L. S. (2014). Adding it up: The costs and benefits of investing in sexual and reproductive health 2014. Retrieved March 2, 2023, from https:// www.guttmacher.org/sites/default/files/report_pdf/addingitup2014.pdf
- Starbird, E., Norton, M., & Marcus, R. (2016). Investing in family planning: Key to achieving the sustainable development goals. *Global Health, Science and Practice*, 4(2), 191–210. https://doi.org/10.9745/GHSP-D-15-00374
- Steenland, M. W., Geiger, C. K., Chen, L., Rokicki, S., Gourevitch, R. A., Sinaiko, A. D., & Cohen, J. L. (2021). Declines in contraceptive visits in the United States during the COVID-19 pandemic. *Contraception*, 104(6), 593–599. https://doi.org/10.1016/j.contraception.2021.08.003
- Stifani, B. M., Avila, K., & Levi, E. E. (2021a). Telemedicine for contraceptive counseling: An exploratory survey of US family planning providers following rapid adoption of services during the COVID-19 pandemic. *Contraception*, 103(3), 157–162. https://doi. org/10.1016/j.contraception.2020.11.006
- Stifani, B. M., Madden, T., Micks, E., Moayedi, G., Tarleton, J., & Benson, L. S. (2022). Society of Family Planning clinical recommendations: Contraceptive care in the context of pandemic response. *Contraception*, 113, 1–12. https://doi.org/10.1016/j.contraception.2022.05.006
- Stifani, B. M., Smith, A., Avila, K., Boos, E. W., Ng, J., Levi, E. E., & Benfield, N. C. (2021b). Telemedicine for contraceptive counseling: Patient experiences during the early phase of the COVID-19 pandemic in New York City. *Contraception*, 104(3), 254–261. https://doi.org/10.1016/j.contraception.2021.04.006
- Tang, K., Gaoshan, J., Ahonsi, B., Ali, M., Bonet, M., Broutet, N., Kara, E., Kim, C., Thorson, A., & Thwin, S. S. (2020). Sexual and reproductive health (SRH): A key issue in the emergency response to the coronavirus disease (COVID- 19) outbreak. *Reproductive Health*, 17(1), 59. https://doi.org/10.1186/s12978-020-0900-9
- The American College of Obstetricians and Gynecologists. (2020). Joint Statement on Abortion Access During the COVID-19 Outbreak. Retrieved February 17, 2023, from https://www.acog.org/en/news/news-releases/2020/03/joint-statement-on-abortion-access-during-the-covid-19-outbreak
- Vahdat, H. L., L'Engle, K. L., Plourde, K. F., Magaria, L., & Olawo, A. (2013). There are some questions you may not ask in a clinic: Providing contraception information to young people in Kenya using SMS. International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics, 123(Suppl 1), e2-6-e6. https://doi.org/10.1016/j.ijgo.2013.07.009
- Wani, R. T., Rashid, I., Nabi, S. S., & Dar, H. (2019). Knowledge, attitude, and practice of family planning services among health care workers in Kashmir – A cross-sectional study. *Journal of Family Medicine and Primary Care*, 8(4), 1319–1325. https://doi. org/10.4103/jfmpc.jfmpc_96_19
- Wood, A. M., White, I. R., & Thompson, S. G. (2004). Are missing outcome data adequately handled? A review of published randomized controlled trials in major medical journals. *Clinical Trials (London, England)*, 1(4), 368-376. https://doi. org/10.1191/1740774504cn0320a
- World Health Organization. (2010). Telemedicine: Opportunities and developments in member states: Report on the Second Global Survey on eHealth. Retrieved February 16, 2023, from https://apps.who.int/iris/bitstream/handle/10665/44497/9789241564144_eng. pdf?sequence=1&isAllowed=y
- World Health Organization. (2013a). Programming strategies for postpartum Family Planning. Retrieved March 15, 2023, from https://apps.who.int/iris/bitstream/hand le/10665/93680/9789241506496_eng.pdf?sequence=1&isAllowed=y

- World Health Organization. (2013b). *Family Planning Counseling*. Retrieved March 10, 2023, from https://www.ncbi.nlm.nih.gov/books/NBK304183/
- World Health Organization. (2020a). Pulse survey on continuity of essential health services during the COVID-19 pandemic: Interim report. 27 August 2020. Retrieved March 24, 2023, from https://www.who.int/publications-detail-redirect/WHO-2019-nCoV-EHS_ continuity-survey-2020.1
- World Health Organization. (2020b). Maintaining essential health services: Operational guidance for the COVID-19 context: Interim guidance, 1 June 2020. Retrieved January 20, 2023, from https://www.who.int/publications-detail-redirect/WHO-2019-nCoVessential_health_services-2020.2
- World Health Organization. (2020c). Coronavirus Disease (COVID-19): Contraception and family planning. Retrieved February 20, 2023, from https://www.who.int/news-room/ questions-and-answers/item/coronavirus-disease-covid-19-contraception-and-family-planning
- World Medical Association Declaration of Helsinki. (2013). Ethical principles for medical research involving human subjects. *JAMA*, 310(20), 2191–2194. https://doi.org/10.1001/jama.2013.281053
- Zuniga, C., Grossman, D., Harrell, S., Blanchard, K., & Grindlay, K. (2020). Breaking down barriers to birth control access: An assessment of online platforms prescribing birth control in the USA. *Journal of Telemedicine and Telecare*, 26(6), 322–331. https:// doi.org/10.1177/1357633x18824828