

Telemedicine and contraceptive counseling: from pilot interventions to a mainstay

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ABSTRACT

Background and context: After the outbreak of the COVID-19 pandemic, the International Federation of Gynecology and Obstetrics (FIGO), echoed by other international bodies and scientific societies, declared contraceptive and family planning services and supplies essential health services, to be provided to women also during the pandemic. One of the six key actions proposed was to 'Implement telemedicine using mobile phones and social media as an adjunct to improving information and access to contraception.

Methods: We review the role of telemedicine in contraceptive counseling up to the present day, and discuss how current information and communication technologies (ICTs) may facilitate counseling and widespread access to effective contraceptive methods.

Results: Experience of the use of telemedicine for contraceptive counseling is scarce, but results show that it is associated with a higher knowledge of contraceptive effectiveness, and a high degree of satisfaction among family planning providers and users. Barriers to the implementation of telemedicine implantation are reviewed, particularly with regard to contraceptive counseling. Current ICTs that might help to provide contraceptive counseling and education are reviewed. The authors seek to evaluate how these technologies might be used to provide information and advice based on the needs expressed by women and their eligibility for certain methods of contraception.

Conclusion: To date, the use of telemedicine for contraceptive counseling has been limited. Efforts should be made to reshape the provision of contraceptive counseling using current ICTs.

KEYWORDS

Telemedicine, telehealth, contraception, contraceptive counseling.

Introduction

Although the present time seems to be a golden moment for telemedicine, its history – albeit in different forms – actually dates back to the beginning of the twentieth century^[1]. The slow pace at which telemedicine was being adopted was suddenly changed by the outbreak of the COVID-19 pandemic. The International Federation of Gynecology and Obstetrics (FIGO), echoed by other international bodies and scientific societies^[2-5], declared contraceptive and family planning services and supplies as essential health services to be provided to women also during the pandemic^[6]. One of the six key actions proposed was to 'Implement telemedicine using mobile phones and social media as an adjunct to improving information and access to contraception', and now is the time to capitalize on pilot interventions^[6]. The COVID-19 pandemic has recently given a boost to the way contraceptive counseling is provided, and the change is surely here to stay.

Objective

In this work we review the role of telemedicine for contraceptive counseling up to today, and look at how current infor-

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mation and communication technologies (ICTs) may facilitate counseling and widespread access to effective contraceptive methods.

Methods

This work is the result of a project commissioned by the Spanish Society of Contraception (SEC) to a board of experts with the aim of reviewing the state of the art of telemedicine in contraceptive counseling and to discuss future perspectives. The board was composed of four obstetricians and gynecologists with extensive expertise in contraceptive counseling and telemedicine (IC, JG, MH, JP) and FL, a practitioner/ICT expert and co-founder of Doctoralia, the leading Spanish digital pla-

transform connecting doctors and patients. A preliminary search of contraceptive counseling-oriented telemedicine initiatives was performed in PubMed in May 2021, using the following combination of terms in English: ('telemedicine'[Title/Abstract] OR 'telehealth'[Title/Abstract]) AND ('contracept*'[Title/Abstract] OR 'family planning'[Title/Abstract]). No language or start date filters were selected. The information gathered was enriched with basic documentation on the state of the art of telemedicine, including the barriers to its implementation. The information retrieved was shared and commented in an online meeting held in July 2021 whose purpose also included the shaping of a proposal for contraceptive counseling using telemedicine facilities. All this information was subsequently turned into a manuscript with the assistance of a medical writer. This service was funded by Bayer Hispania.

Results and discussion

Telemedicine and contraception: the state of the art before the COVID-19 pandemic

In February 2021, 37 publications fulfilling the search criteria were retrieved, of which 27 were published before 2020. Of these, two reviews analyzed all the evidence on the effectiveness of several interventions, the latest up to September 2019^[7,8]. This evidence included five randomized controlled trials (RCTs) assessing the impact of text/voice messages or smartphone apps^[9-13] on contraceptive knowledge and/or initiation/use; a retrospective study^[14], and two RCTs^[15,16] assessing the effectiveness of text message intervention on contraceptive continuation; and finally, three RCTs^[17-19] assessing the effectiveness of text messages or e-mail reminders in improving contraceptive use or adherence. Only a quasi-experimental study assessed the impact of an ICT on contraceptive counseling. This study, conducted in the USA among 52 sexually active females aged <30 years attending a Title X clinic, assessed the value of a theory-based iOS app providing long-acting reversible contraceptive (LARC) counseling to be used in the clinic waiting room vs. standard of care. In this study, app users had a significantly higher knowledge of contraceptive effectiveness ($p=0.0001$) and increased interest in the implant (7.1-32.1%, $p=0.02$) vs. users of standard of care. They were highly satisfied with the app and no particular problems with its use in the clinic were reported^[20].

Contraception during the COVID-19 pandemic

On January 31, 2020, the World Health Organization declared the outbreak of SARS-CoV-2 a public health emergency of international concern, a situation that has not changed at the moment of writing this manuscript (October 2021). In these dramatic times, telemedicine has offered a solution to the barriers created by the pandemic in terms of access to health facilities and resources²¹. Our search retrieved few experiences of contraceptive counseling using telemedicine during this period. One of them reported achieving a rapid adolescent telehe-

alth scale-up during the pandemic at a single large academic medical center, where contraception and menstrual disorders accounted for 22% of consultations. Interactions occurred by video via a mobile smartphone app and providers could synchronously access charts via computer for review and documentation. Interestingly, the authors claimed that a 'telehealth infrastructure existed before COVID-19 but was typically unused because of lack of insurance reimbursement'. The rapid adoption of telemedicine allowed remote visits in 82% of cases between March 16 and April 15, 2020. However, social access biases for accessing these services were observed^[22].

And what does experience say?

Two surveys conducted in the USA have analyzed the role of telemedicine for contraceptive counseling from the point of view both of family planning providers and of patients^[23,24]. The first one, conducted among 172 family planning providers, showed that although 78% of them were new to telemedicine, most of them (80%) found it an effective way to provide contraceptive counseling, to the extent that 64% of the participants would be open to providing telemedicine visits after the pandemic. Interestingly, 54% of the providers reported relatively low referral rates (less than 25%) of patients seen via telemedicine for contraception, the main reason (53%) for referrals being the placement of a LARC device^[23]. Similarly, in a survey of patients who had telemedicine visits for contraception during the early phase of the pandemic ($n=86$), 86% of respondents reported a high degree of satisfaction with the telemedicine visit and 63% stated that it completely met their needs. Half (51%) of them would be happy to choose this method over in-person visits. The same study included in-depth interviews with 23 patients, who highlighted the convenience of telemedicine, especially for those with work or parenting responsibilities. For those who had a subsequent in-person visit, many found it more efficient after having received the counseling remotely. Forty-three percent of the patients expressed a preference for video over phone visits^[24], a percentage that is similar to that expressed by healthcare professionals in the above-mentioned study (56%)^[23].

How to move forward

Telemedicine is here to stay. The feasibility of remotely administering aspects of the initiation of contraceptive methods, such as a medical history review for contraindications or a consultation for this purpose, for the provision of information about safe and effective use and for selection of contraceptives, is nowadays accepted, leaving face-to-face consultations only for highly selected situations^[25]. People's healthcare experience during the pandemic also indicates a readiness to adapt to change and to keep using ICTs for consultations^[26]. Now is the time to make progress, making the most of ICTs and definitively overcoming the barriers that have traditionally prevented telemedicine from expanding^[27-30] (Table 1). In short, adaptations are needed within healthcare systems, and on the part of providers, policymakers, payers, researchers, and society at large^[29].

When focusing on the field of contraceptive counseling, other issues also need to be considered. For example, since it was first implemented, several concerns have been voiced about

Table 1 General and specific barriers to implementing telemedicine for contraceptive counseling.

General [27-30]	Specific [31,34,35]
<ul style="list-style-type: none"> • Cost and complexity of implementing telemedicine services and of adaptation to specific clinical needs. • Existence of restrictive regulations on telemedicine deployment, reimbursement, licensing, and handling of confidentiality issues (cybersecurity). • Lack of technical and ethical guidelines and legal frameworks. • Practitioners' lack of training and presence of unfounded fears. Absence in daily workflows. • Patients' lack of confidence in telemedicine. • Need to ensure equitable access (i.e., broadband access and computer literacy). 	<ul style="list-style-type: none"> • Safety of using telemedicine to identify contraindications to the use of COC. • Accuracy of the information provided by women. • Age restrictions to accessing these online services and for contraceptives. • Cost of the service. • Confidentiality concerns.
COC, combined oral contraception	

the safety of using telemedicine to identify contraindications to the use of combined oral contraception (COC) [31-33]. A study that analyzed nine online platforms prescribing hormonal contraceptives across the USA concluded that 'efforts could be made to strengthen the rigor of online health questionnaires to ensure they adequately screen for all contraindications' [31]. Among other concerns, the accuracy of the information provided by women wanting (and probably in a hurry) to get a contraceptive method has been questioned, especially with regard to measurements like blood pressure, for which a self-monitoring device or a local pharmacy is needed [34]. The age restrictions for accessing these online services may also pose a barrier to their use by adolescents, an especially vulnerable population [35]. The need to pay for a service may also constitute a barrier to its use, an aspect especially relevant in countries with universal access to healthcare services. Conversely, the confidentiality granted by these platforms and the ease of access to the consultation may favor their use for contraceptive counseling [35].

As barriers to the deployment of telemedicine are overcome, the technological advances we are witnessing are of great value in tackling many of the current urgent needs in the field of contraception, i.e., the need to provide all the information necessary for an informed choice, to foster access to and adequate use of contraceptive methods, and to help answer doubts and concerns, correct erroneous beliefs, and dispel myths among both healthcare providers and women, especially with regard to LARC methods [36-42], whose use has been encouraged during the COVID-19 pandemic given their higher effectiveness and their lower need for return trips for supplies [6]. As things stand:

- Traditional tools used to share information between women and healthcare providers, such as web-based health platforms (portals), apps, short message service/text messaging, telephone, and live audio-visual communications [7], need to expand to include social media [6]. All these are valuable tools for generating awareness of the need for effective contraception, and for providing information on contraceptive methods and 'real-time' consultations.
- Artificial intelligence (AI) may also have a role in helping women to make their choice in a similar way to how 'symptom checkers' (chatbots) on several web-based health portals work. Some AI engine-based apps can also be used to take measurements needed for assessing COC eligibility, like blood pressure, using conventional video cameras and AI engines.

By using telemedicine and AI for contraceptive counseling, women have more time to receive and process the information, so that medical consultations can be used to answer questions, resolve

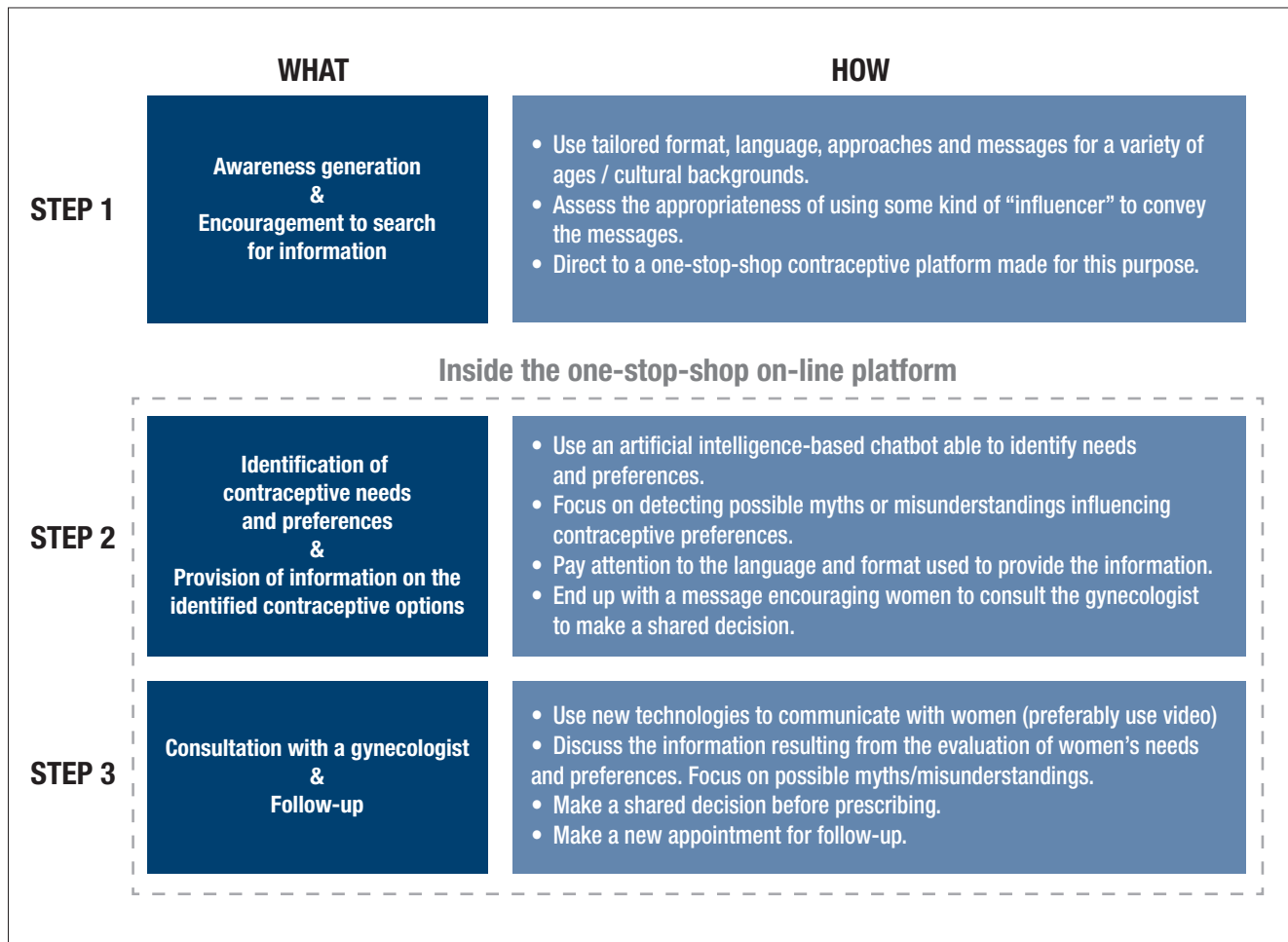
doubts, choose the most suitable method through shared decision making, assess eligibility for the chosen method, and start using the method (prescription), except in the case of LARC methods. This greatly reduces the burden of care for gynecologists.

Reshaping contraceptive counseling

All the elements discussed and other unified observations based on experts' experiences gave rise to a tentative flow consisting of the following steps (Figure 1):

- *Step 1.* Generating awareness of the need to use effective contraception and to find the right way to obtain the relevant information. This could be undertaken by identifying prominent voices ('influencers') for the population(s) to be targeted. By using appropriate social media platforms, messages can be delivered to different audiences through tailored language, formats, and approaches.
- *Step 2.* Providing women with information on contraceptive methods based on their gestational wishes, contraceptive needs, and preferences. These can be identified by an AI engine-based chatbot located on a web-based contraceptive counseling platform (portal). A special effort needs to be made to detect preferences based on myths or misunderstandings surrounding other methods (i.e., asking a question about the reason for not choosing or choosing a given contraceptive method). Based on the information collected by the chatbot, the portal would offer information on contraceptive methods according to, on the one hand, the needs expressed by the woman and, on the other, her preferences, so that a range of contraceptive options can be offered beyond current knowledge and preconceived ideas. Special attention must be paid to the language and format used to convey the information. In addition to providing a repository of information, a series of 'events' could be organized, which would be offered to women based on their preferences. These services could also be available in a mobile app.
- *Step 3.* The portal would also offer the possibility of making an appointment with a gynecologist to further discuss the patient's preliminary choice(s), make shared decisions, further assess eligibility, and provide a prescription or make an appointment for LARC insertion. These would take place by video, or by telephone when a video conference is not possible. Remote follow-up visits could be arranged for the same day of the prescription/LARC placement, and reminders could be sent by WhatsApp or short messages (text messages).

This preliminary approach could be tailored to the different scenarios (different national health care systems), and endorsed by the competent national society for contraception.

Figure 1 Proposal of steps to follow when planning a telemedicine contraceptive counseling service.

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