**Confidence in Telemedicine:**

**Women’s Attitudes toward Mail-Order Birth Control**

Abstract

Approximately 19.5 million women in the US do not have reasonable access to birth control prescriptions due to barriers such as lack of insurance, funding, time or transportation to a medical facility. Over the last decade, mail-order birth control, a telemedicine service, has worked to reduce these barriers. This study uses the thory of planned behavior to explore the barriers that women face, as well as their intention regarding and attitudes towards purchasing birth control online. Adopting a mixed-methods approach, we draw information from both an online survey and in-depth interviews with women aged 18-44 from states in the southern and midwestern US. Our study finds that women would feel comfortable using such a service, and that perceived norms have an impact on their intention to purchase mail-order birth control. However, women are concerned about finances and reliability. As for telemedicine, women with prior experience of telemedicine or communicating with online doctors are more likely to order birth control online. We also find that women have mixed views on the advantages and disadvantages of online doctor-patient interaction, insurance coverage, and the reliability of the medicine.

**Confidence in Telemedicine: Women’s Attitudes toward Mail-Order Birth Control**

Currently, 19.5 million women do not have access to birth control prescriptions in the United States. These women live in areas known as “contraceptive deserts,” which are typically rural ones where women do not have reasonable access to a medical facility where they can receive a doctor’s prescription for birth control. Barriers that women in contraceptive deserts face include lack of insurance or funding for a doctor’s visit and a lack of time to get to or transportation to a doctor’s office (*Power to Decide*, 2019*)*. However, a new online phenomenon, mail-order birth control, works to reduce these obstacles. Mail-order birth control is a form of telemedicine that allows physicians to examine patients and provide treatments and prescriptions solely through a patient’s computer or smartphone (Zuniga et al., 2019). The service allows women to order their birth control online and have it sent directly to their home or pharmacy. This study uses the theory of planned behavior to identify women’s intentions for using mail-order birth control, their attitudes to it, and the barriers they face when trying to purchase it. After determining these factors, we will show how telemedicine and mail-order birth control can help increase access to hormonal contraceptives. The study is based on a mixed-methods design and relies on responses of participants recruited from the southern and midwestern United States. The information gathered about these womens’ needs, attitudes to and the barriers they face indicates that mail-order birth control could be used to provide these 19.5 million women with hormonal contraceptives. The goal of this study is to promote women’s sexual health and access to birth control.

**Literature Review**

**Birth Control and Health Disparity**

In the United States, 70 percent of women of reproductive age (15-44) are at risk of unintended pregnancy. Sixty percent of these are using some form of contraception, which includes hormonal contraceptives as well as condoms, sterilizations, etc. (Guttmacher Institute, 2020).

Oral contraceptives for women were legalized in the United States in 1960. Since then, birth control has been nothing less than revolutionary for women and society as a whole. Hormonal contraceptives have helped women better plan and space out their pregnancies and have had a positive effect on women’s health outcomes and lives. They have also increased women’s ability to actively participate in the American economy (Richards, 2016). In addition, they have contributed to a reduction in poverty and abortion rates. Birth control promotes not only women’s, but also men’s well-being so that both can focus on accomplishing life goals such as completing their education (*Power to Decide,* 2019).

While birth control has become more widely accessible to women, some still face obstacles when trying to obtain a prescription. In the United States, 19.5 million women currently lack proper access to birth control prescriptions. Most of these need publicly subsidized birth control and/ or live in “contraceptive deserts,” areas in which women have no reasonable access to medical facilities due to lack of transportation, time, convenience, proximity, insurance or money (*Power to Decide*, 2019). Sometimes these women also do not have a primary care physician or facility that they can visit. Others cannot take off from work or school to see a doctor who may have inconvenient hours (Zuniga et al., 2019). These contraceptive deserts are typically in rural areas where the most one can find is a convenience store or Dollar General.

Current efforts to reduce the barriers posed by contraceptive deserts, such as selling oral contraceptives over the counter, are in the works, but the Food and Drug Administration’s (FDA) approval process for this could take years. However, another way in which to reduce contraceptive deserts is telemedicine, a solution already actively practiced. Telemedicine has removed some of the aforementioned barriers by allowing women to obtain hormonal contraceptives on a computer or smartphone. To do so, women must log into mail-order birth control websites, where they fill out a health questionnaire, which is then reviewed by online doctors who prescribe and ensure that hormonal contraceptives are delivered straight to the patient’s home or pharmacy (Zuniga et al., 2019).

Telemedicine and mail-order birth control services are still a fairly new phenomenon. Moreover, many policymakers have reservations about telemedicine as there is not enough existing literature to show whether online treatments have the same outcomes as do face-to-face doctors’ appointments (Wootton, 2001).

***Telemedicine***

Today, modern technology allows physicians to examine patients and make treatment recommendations from any distance. This phenomenon is known as telemedicine. It relies on the Internet and is becoming an increasingly common mode of healthcare delivery in various health fields such as dermatology, neurology, and even intensive care. By 2012, half of all US hospitals reported using a telemedicine system (Kahn, 2015).

However, telemedicine has been used interchangeably with telehealth. Telemedicine is similar to telehealth, also known as e-health, but is defined differently. Telehealth is a broader concept that uses “electronic information and telecommunication technologies to support long-distance healthcare, patient and professional health-related education” (Singh, Roy & Goyal, 2016). Telehealth offers medical information on improving a patient’s health, as does WebMD, for example (Dorsey & Topol, 2016). Telemedicine, on the other hand, uses telecommunication to deliver healthcare from a distance. It is an alternative to face-to-face care, and, unlike telehealth, may involve clinical treatments (Flodgren, et al., 2015).

Telemedicine is growing at a rapid pace due to advances in telecommunication and its lower cost (Wootton, 2001). Telemedicine has the potential to expand access to high-quality healthcare. This is due its many advantages. In terms of finances, telemedicine can reduce the costs of running a medical facility (Kahn, 2015). It can also reduce individuals’ healthcare costs and improve patient health outcomes by offering access to a wider range of healthcare (Flodgren et al., 2015). In addition, telemedicine makes healthcare and health services more convenient for patients and physicians. Primary care physicians can use it to treat patients such as nursing home residents or disabled patients who have difficulty visiting clinics (Kahn, 2015). It is especially beneficial for those who live in isolated communities and rural areas as it can help these individuals obtain medical help more efficiently and at a reduced cost (Singh, Roy & Goyal, 2016).

Although telemedicine offers many benefits, especially for those in rural areas, some policymakers warn against it. This is due to the lack of scientific evidence regarding its outcomes and its reliance on unevaluated technologies (Wootton, 2001). More recent literature has not resolved the issue of whether telemedicine has the same outcome as do face-to-face appointments (Kahn, 2015).

**Telemedicine and Birth Control**

Regardless of such concerns about telemedicine, the method continues to grow and expand. It is easy for people to receive treatment and prescriptions over their computer or smartphone. The past few years has seen the rise of telemedicine websites that allow women to receive birth control prescriptions online. Women can log onto these websites and fill out a questionnaire about their health and medical history. The questionnaire is then reviewed by an online doctor who prescribes a hormonal contraceptive that is sent directly to the patient’s home or pharmacy.

This process is beneficial for many women, especially those living in rural areas. The traditional way for a patient to obtain a prescription for birth control is to find a nearby medical facility, make sure they accept her insurance, schedule an appointment, and meet with the doctor in person. Many women, however, cannot complete this process due to a number of barriers. Women living in rural areas, in particular, face barriers such as not having a regular doctor or clinic, being unable to take time off from school or work, lacking time or transportation to get to the office, or being unable to make it to inconvenient clinic hours. One of the greatest obstacles is the lack of affordable health insurance or money to cover appointment payments. This makes obtaining hormonal contraception difficult for many women (Zuniga et al., 2019).

Women’s access to birth control can be improved through telemedicine and mail-order birth control. As of February 2018, nine US-based platforms prescribe birth control online, sincluding HeyDoctor and Lemonaid (citations). These sites accept insurance, and/or have low out-of-pocket costs. Most websites offer oral contraceptives, but some also offer the patch and vaginal ring. Once the order is placed, the hormonal contraceptive is delivered to the patient in a “discreet” package. In addition, some sites provide other services like at-home STI testing kits, HIV prep, and HPV screening.

Such new health care services seem accessible and easy to try, but not that many people use them. A significant barrier to their adoption is social acceptance of the method. Cranen and her colleague (2011) conducted a pre -and post-test of users’ perceptions of telemedicine websites. Among participants with no prior experience of telemedicine, many had reservations about the idea but had a positive perception after experimenting with the service. A brief trial of telemedicine services may thus reduce the risk and uncertainty of adopting the new method, impact patients’ perceptions of it in a positive way (Cranen et al, 2011; Rogers, 2003), and eventually increase acceptance of this new form of healthcare. Patients’ prior experience of and comfort with telemedicine services can therefore be related to women’s acceptance of mail-order birth control.

H1: Women’s perception of the comfort level of telemedicine will be positively associated with their intention to purchase birth control online.

H2: Women’s experience of telemedicine will be positively associated with their intention to purchase birth control online.

***Barriers to Using Telemedicine***

Mail-order birth control sites have broken down many of the barriers that women in contraceptive deserts face. But similar to telemedicine and online health services, mail-order birth control services have generated concerns about safety. Since patients are reviewed and submit their medical history online, it is impossible to screen them for medical conditions such as high blood pressure. Currently, one-third of Americans have high blood pressure. Women with high blood pressure should not be prescribed certain hormonal contraceptives (Zuniga et al., 2019).

Despite the safety concerns about telemedicine, the service will continue to grow. However, the factors that motivate or prevent women living in contraceptive deserts from purchasing contraceptives online are still unknown. Understanding such motivations and barriers is crucial to finding the best way to promote telemedicine services for women’s health. We thus propose two research questions:

RQ1: What are the current attitudes of women toward purchasing birth control online?

RQ2: What are the barriers that women face when it comes to purchasing birth control online?

**Theory of Planned Behavior in the Telemedicine Context**

Along with exploring attitudes and barriers to the use of telemedicine, the current study applies the theory of planned behavior to the adoption of telemedicine services and to explain the process of purchasing contraceptives online. The theory of planned behavior (Ajzen, 1985) identifies behavior determinants and the relations between them. It is, in fact, a reformulation of the theory of reasoned action with the added notion of self-efficacy to behavioral performance (Dillard & Shen, 2013). Figure 1, as created by Fishbein (2008), shows the situational/ background factors of humans such as demographics, personality, values, etc. Situational and demographic variables must be taken into consideration in the study of any behavior (Fishbein & Ajzen, 2010). Such factors influence people’s beliefs and values, which, in turn, lead to the formation of attitudes, perceived norms and perceived behavioral controls.

Attitudes are an evaluation of performing a potential behavior in terms of “favor to disfavor” or “like to dislike.” Perceived norms, particularly subjective norms, are the extent to which an individual believes that others think that he or she should or should not engage in a particular behavior, i.e. the individual’s expected approval or disapproval by others. Perceived behavioral control refers to the individual’s self-efficacy to perform a behavior if no situational obstacles prevent him or her from doing so. Attitudes, norms, and behavioral control lead to behavioral intention, the most immediate determinant for engaging in a behavior. Behavioral intention is people’s readiness to perform behaviors (Dillard & Shen, 2013).

----------------------------------

Insert Figure 1 About Here

----------------------------------

Behaviors affect one’s health and well-being. For example, safer sex practices lead to fewer contractions of diseases and infections. Human behaviors have an impact on individual well-being as well as on social problems and issues at large (Fishbein & Ajzen, 2010). The theory of planned behavior can help us understand the determinants of health practices. The theory is often used to determine what leads people to certain health behaviors. In this case, the theory can be used to see what leads women to use hormonal contraceptives as well as what prevents them from doing so. It offers the best key to understanding why women may choose to purchase their birth control method online. The theory of planned behavior can be used to observe the background factors, attitudes, norms, and barriers involved in purchasing birth control online. Mail-order birth control is a possible solution to contraceptive deserts. A clear understanding of the specific barriers that women face and their attitudes toward purchasing online may help us determine what leads them to purchase their birth control online. The following research questions and hypotheses are thus addressed here:

H3: Are women’s attitude toward (a) birth control and (b) mail-order birth control positively associated with their intention to purchase birth control online?

H4: Are women’s (a) subjective norms, (b) injunctive norms, and (c) descriptive norms vis à vis mail-order birth control positively associated with their intention to purchase birth control online?

H5: Are women’s (a) perceived barriers to visiting a doctor’s office, (b) financial barriers (insurance coverage of birth control), and (c) geographical barriers (distance to doctor’s office) positively associated with their intention to purchase birth control online?

**Methods**

**Mixed Methods**

***Quantitative Approach: Online Survey***

We adopt a mixed-methods approach to addressing our research questions and hypotheses. The method consists of an online survey and in-depth interviews.We used Qualtrics for the online survey and Amazon’s Mechanical Turk (MTurk) online panel to recruit research participants. Studies have proven that MTurk is a valid online participant recruiting method. For example, Casler et al (2013) find that MTurk online samples are more socioeconomically and ethnically diverse than are other types of samples, such as those with in-lab participants or social media recruits. Buhrmester et al (2011) note that test results across the three samples are indistinguishable. We provided participants with informed consent forms at the beginning of the survey and offered them small incentives as compensation through the MTurk system at the conclusion of the survey. Participants spent 10.78 minutes on average completing the survey.

***Qualitative Approach: In-Depth Interviews and an Open-Ended Question Survey.***

The interviewees were recruited through the survey. An optional question asked them to leave their contact information for a follow-up interview in which they could share their story and experience. Five women agreed to participate in the interviews.

Phone interviews were conducted and audio recorded with the participants’ consent. Semi-structured open-ended questions were asked regarding the interviewees’ current living situations, the barriers they face when trying to obtain birth control, their knowledge and use of contraceptives, their attitudes toward mail-order birth control, and their attitude, knowledge, and use of telemedicine. A $20 Amazon gift card was mailed to each interviewee after the interview.

Although the research took a mixed-method approach, the in-depth interviews were regarded as a supplementary component because the numeric and verbatim data provided by our survey showed no lack in testing the hypotheses and answering the research questions. The five interviews were extensive enough to confirm the survey data.

**Sampling Procedure**

The survey targeted women ages 18 to 44 because this is regarded as the average reproductive age for women (Guttmacher Institute, 2018). We chose all ten states in the Midwest and three in the South (Alabama, Texas, and North Carolina). According to *Power to Decide* (2019), the selected states offer a wide range of health clinics that provide women with hormonal contraceptive prescriptions. In terms of the number of clinics providing birth control, the Midwest is also identified as a contraception desert (*Power to Decide*, 2019). Of all southern states, Alabama has reportedly the lowest number of such clinics. Over 300,000 women in Alabama are in need of birth control, however, only 17 clinics offer it (*Power to Decide*, 2019). Texas was selected for the study because it is (1) often cited as an example of a contraception desert by the mass media (McClurg & Lopez, 2018) (2). It the largest state in the South in terms of territory and population and (2) has a moderate number of health clinics across its territory: 401 clinics for 1,700,000 plus women who need contraception. Some counties have multiple clinics, some a few, and some none at all (*Power to Decide*, 2019). North Carolina was chosen due to the disparity in healthcare access between its rural and urban areas (*Power to Decide*, 2019).

***Sample***

A total of 603 participants were recruited in February and March iof 2020, of whom 177 (29.4%) reside in Texas, 113 in North Carolina (18.7%), 36 in Alabama (6%), and 337 in the ten Midwestern states (55.9%). Their median age was 30-34 years old, while their median income fell in the $50,000 - $74,999 range. The average education level was a four-year college degree. 72.4% (n=435) of the sample identified themselves as Caucasian.

***Measures***

*Purchase intention of mail-order birth control.* The purchase intention consists of a single item on a 7-point Likert scale: *I would use an online birth control service in the next three months:* M = 4.19, SD= 2.03, α = n/a.

*Perceived comfort level of using telemedicine*. Three 7-point scale statements were used to measure perceived comfort level of using telemedicine tools: *I would feel comfortable receiving medical treatment from an online doctor via (a) phone call, (b) text chat, and (c) video chat* (M=4.80, SD=1.49; α= .855).

*The scope of telemedicine experience.* This was calculated as the sum of three dichotomous items, as follows: *Within the last 12 months, (a) I have used online websites to receive medical treatment or prescriptions, (b) I have sent or received a text message from a doctor or other healthcare professional, (c) I have shared health information from either an electronic monitoring device or smartphone with a health professional:* 0=no 1= yes, a summation of the scope ranges from 0 to 3, M=1.32, SD=1.08.

*Attitude toward birth control*. We adopted six 7-point scale items from Terry and O’Leary (1995) and edited the wording according to the purposes of our study: *Taking hormonal contraceptives would be (a) bad – good, (b) unpleasant – pleasant, (c) inconvenient – convenient, (d) not reliable – reliable (e) not affordable – affordable, and (f) uncomfortable – comfortable*: M= 4.98, SD=1.35, α= .871.

*Attitude toward mail-order birth control.* The statements about attitude toward birth control were reused, but the options asked respondents about their attitudes toward mail-order birth control: M=5.61, SD=1.26, α= .892.

*Subjective norm and descriptive norm*. Each of the two statements was used to measure the subjective norm and descriptive norm, respectively, on a 7-point Likert scale (Ajzen, 2006): *When it comes to matters of birth control, I want to be like my friends* (Injunctive norm:M=3.38, SD=1.77, α= n/a), and *Most people like me would purchase birth control online* (descriptive norm: M=5.20, SD=1.56, α= n/a).

*Injunctive norm*. Two 7-point Likert scales were used to measure the injunctive norm as follows: (a) Most people who are important to me (my doctors, parents, friends, significant other) would approve of me taking birth control, and (b) Most people would approve of me purchasing birth control online (M=5.50, SD=1.29, α= .986).

*Perceived barrier to visiting the doctor’s office*. Three 7-point Likert scale statements were used with reversed coding: (a) I have time to get to a doctor’s office when needed, (b) Doctors’ offices are open when I am available, (c) I can manage my schedule when I need to visit a doctor’s office: M=1.88; SD=1.39; α=.903).

*Barrier: insurance coverage.* One dichotomous item asked whether the respondent had insurance that covers birth control: 0= covered (n=434, 72%), 1 = not covered (n=169, 28%).

*Barrier: distance to doctor’s office.* One dichotomous item asked whether the respondent lived within 15 miles of her doctor’s office: 0= within 15 miles (n=552, 91.5%), 1 = more than 15 miles (n=44, 7.4%).

*Covariables*. Controlling variables were listed as follows: self-rated overall internet skill, prior experience using mail-order birth control, age, education, and income. The overall internet skill was measured with a single Likert scale item, ranging from 1= poor to 7= excellent (M=6.39, SD=.856). Prior experience of mail-order birth control was measured with a dichotomous item asking whether the respondent had used mail-order birth control in the past 12 months: 0=no, 1=yes (n=98, 16.3%). Descriptive statistics results concerning age, education, and income status were reported in the sample section above.

**Results**

A hierarchical regression analysis was used to test hypotheses. Participants’ age, education, internet skills, and prior experience with mail-order birth control were controlled in the regression analysis. Hypothesis 1 and 2 explore the association between women’s telehealth experiences and their intention to purchase mail-order birth control, and Hypotheses 3s through 5s address the key variables of the theory of planned behaviors. Hypothesis 1 addresses how the perceived comfort level of telemedicine is associated with the intention to purchase birth control online. As seen in Table 1, women’s positive perception of telecommunication tools is associated with their intention to purchase birth control online (*β*=.360, *p*< .001). Hypothesis 2 addresses how prior experience of telemedicine services affects the intention to purchase mail-order birth control. The regression analysis shows that the scope of telemedicine experience has a positive impact on the intention to purchase (*β*=143, *p*<.01). In summary, perceived comfort level and prior trials of telemedicine services determine women’s interest to purchase mail-order birth control.

--------------------------------

Insert Table 1 About Here

--------------------------------

Hypotheses 3a and 3b examine the impact of women’s attitude toward birth control and mail-order birth control on their intention to purchase mail-order birth control. Both attitudes (*βAttitude toward birth control*=.234, *p*<.001; *βAttitude toward mail-order birth control*=.370, *p*<.001) are positively associated with the intention to purchase. Hypotheses 4s address the impacts of perceived norms on the intention to purchase. All three norms – subjective (*β*=.249, *p*<.001), injunctive (*β*=.117, *p*<.01), and descriptive (*β* =.183, *p*<.001) – are positively associated with the intention to purchase mail-order birth control. Hypotheses 5s addresses the relationship between women’s perceived barriers to accessing health care services and their intention to purchase mail-order birth control. The hierarchical regression analysis showed that when women find visiting a doctor’s office inconvenient, they are more likely to show intent to purchase birth control online (*β* =.087, *p*<.01). However, insurance coverage (*β*=.026, *p*= n.s.) and distance to a doctor’s office (*β*=-.031, *p*= n.s.) do not affect women’s intention to purchase birth control. Therefore, only Hypothesis 5a is confirmed, while Hypothesis 5b and 5c have been rejected.

--------------------------------

Insert Table 2 About Here

--------------------------------

RQ1 explores women’s attitudes toward mail-order birth control. Two open-ended questions investigate the advantages and disadvantages of using mail-order birth control. The results reveal interesting findings. In particular, one aspect of the service is perceived as both an advantage and a disadvantage. For example, 464 respondents admit that mail-order birth control would be convenient (n=464) and that they they would enjoy it because they would not need to visit a doctor’s office to renew their birth control prescription (n=73). One interviewee describes her situation as follows:

[Interviewee #5] Yeah. You know the normal stuff: work, kids. trying to schedule everything and everything going on.… when you're going into a doctor, it's hard because a lot of the times, my son is the one that's homeschooled. So I can't take them back in the room with me. So then I have to have him sit in the waiting room, and I have to make sure he's entertained. And I have to ask the receptionist, can you keep an eye on him because he's a little too young? It's very inconvenient.

However, the disadvantage, according to respondents, is not having a consultation with a doctor (n=92), which they feel would be the downside of the telemedicine service. Similarly, although women perceive the mail-order birth control as more affordable than the pills prescribed by a doctor (n=74), many of them point to insurance coverage, the upfront cost of the order, and shipping as the disadvantages of mail-order birth control. The new online service would protect women’s privacy from doctors and pharmacists (n=49). However, respondents also express concern about health information security in an online environment and see this as a disadvantage (n=16). In summary, women’s attitude toward mail-order birth control is complex. Like a double-edged sword, the new telemedicine service offers women opportunities but also comes with risks.

For answer to the RQ2, we asked one open-ended question regarding the barriers that hindered women’s use of mail-order birth control. Most respondents mention financial issues, such as the price of the products and insurance coverage (n=107). To some extent, this contradicts the H5b test result. However, it is conceivable that financial elements such as insurance support and out-of-pocket costs play a key role in encouraging women to try the new telemedicine service. Reliability (n=78) and trustworthiness of telemedicine services and product safety (n=31) are among the main barriers. Another noticeable barrier is disapproval from family or peers (n=38). Although using birth control is a highly personal matter, respondents care about the approval of their reference groups, which is consistent with what the theory of planned behavior concludes about decision-making processes and human behavior. The interviewees’ reactions nonetheless reveal subtle differences:

[Interviewee #2] I doubt they would ever know but I don't think they'd mind if I did. Since they know my work schedule and I'm driving all the time, this thing here in this thing here, you get a lot of stuff mailed. They would understand.

[Interviewee #3] I think my friends would be fine with it. I don't know about my family. I probably wouldn't tell them.

[Interviewee #5] Actually, their opinion doesn't matter. Yeah I mean not to be rude but yeah. I wouldn't even listen to my sisters. Something like that comes down to the couple.

**Discussion**

The current study explores women’s intention to adopt a telemedicine service: mail-order birth control. First, it finds that women who have previously used telemedicine services or who feel comfortable talking to doctors online are more likely to purchase birth control online. Women who already communicate with doctors via websites, smartphone apps or patient portals are more likely to adopt mail-order birth control services. This finding indicates that prior experience matters when it comes to comfort levels and likeliness to order from online doctors. The results suggest that women who are satisfied with the quality of their patient-doctor interaction via technology are more likely to adopt online options for birth control. Such prior experience reduces uncertainty and risks on the patients' end and fosters her confidence in telemedicine (Cranen et al, 2011; Rogers, 2003).

Second, in order to gain a socio-psychological perspective, this study also uses the theory of planned behavior to improve our understanding of patients’ acceptance of telemedicine (Ajzen, 2006). It discovers that women’s intention to purchase birth control online is determined by precedents such as attitudes, norms, barriers faced, and environmental factors. The study also examines women’s attitudes to telemedicine by looking at their perceived comfort and confidence levels when using online health services. It thus helps us understand what factors may lead women to or hinder them from ordering birth control from online websites. This study also helps us understand what barriers women, particularly those in rural areas, when trying to obtain birth control.

We find that women overall have positive attitudes towards hormonal contraceptives and mail-order birth control services. The women in our study exhibit a stronger intention to order online. However, many women, including those with positive attitudes, admit that taking hormonal contraceptives is inconvenient because, for example, it means having to take a pill on a daily basis. On the other hand, many women claim that ordering birth control online would be convenient since it means not having to drive to a doctor’s office or pharmacy.

The survey shows that women’s perceived norms also plays a role in their intentions (Table 1). Women’s subjective, injunctive, and descriptive norms all have an impact on their decisions, but subjective norms have the greatest one. However, the interviewees contradict these findings as many of them claim that their friends and family have little influence over their birth control decisions. They communicate about birth control use and types strictly with their face-to-face doctors. Such a discrepancy may indicate the complexity of the human decision-making process. As social beings, women may want approval from their peers regarding their decisions about birth control despite the fact that they feel their decision is ultimately a personal matter. When adopting a new behavior, peer approval may serve as a safeguard that reduces risks and uncertainty.

Third, our survey finds that women with perceived barriers to doctors’ offices, such as inadequate communication or long wait times, indicate greater intention to use mail-order birth control. Financial and geographical barriers appear to have no significance for intentions. These include insurance coverage, out-of-pocket costs, time traveling to and distance from medical facilities. This contradicts the findings of the qualitative data (Table 2). The interviewees, all women living in rural areas, are vocal about the fact that financial and geographical barriers play a significant role in their ability to obtain a birth control prescription. This leads them to express greater intention to purchase contraceptives online. It appears that women in America face many barriers regardless of whether they do or do not have access to birth control. They often have to try multiple birth control types and brands before finding one they can stick with.

One thing that should not be ignored is that many women report experiencing adverse effects to birth control pills. Discussing this or switching means of birth control may be harder when communicating with online doctors. This concern was revealed in the open-ended question responses (Table2). Some respondents misunderstood that they would be able to purchase hormonal birth control online without doctor’s approval, which is not true. Future studies need to address how thoroughly and accurately mail-order birth control providers display information regarding their drugs, the purchase procedure of birth control, and the availability of doctors online. Otherwise, women may be exposed to the detrimental side effects of improperly prescribed hormonal birth control pills (Riski et al., 2019).

**Limitations**

Our study provides insight on access to birth control via online and face-to-face doctors. It faces limitations that are worthy of consideration for future research. The sample turned out to consist of slightly over 70% Caucasian women although we anticipated a higher Hispanic rate in Texas. We believe this turnout may be due to the locations selected, such as the Midwest. Future research may want to consider recruiting a more diversified ethnic mix of respondents. Second, the distance to pharmacies may be linked to intention as well. Our study did not examine trust as a component of online and offline doctors. The survey portion did not observe the quality of interactions between women and their doctors. Finally, future studies can better explore the reliability of online doctors on mail-order birth control websites. All these factors should be thoroughly researched. Nonetheless, our study marks another step towards promoting women’s health and access to birth control methods.

**Conclusion**

Despite its limitations, this research provides a clear picture of attitudes, norms, barriers, and comfort levels related to the use of birth control and ordering it online. Its findings help us better understand the process that women undergo when obtaining a prescription for hormonal contraceptives. Telemedicine plays a large role in the study as does understanding women’s perceived comfort levels when communicating with doctors online. This study provides insight into women’s access to birth control both online and offline. Regardless of their living or environmental situations, many women continue to face barriers obtaining and using hormonal birth control.