

**Telemedicine and E-health during Covid-19:
A Study on Reproductive Healthcare Practices
Amidst the Pandemic**

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Abstract

As a response to the Covid-19 pandemic, telemedicine and telehealth websites have become increasingly more common and necessary. This thesis aims to understand how the shift to online care influences what it means to be a patient in covid-era and potentially post-covid America. It aims to explore how the patient experience is impacted by online care and how the integration of communication technologies and wearable devices are shaping health care today. Taking a specific look at the direct changes apparent in reproductive and sexual health care, this study analyses patient experiences using telehealth sites and e-health technologies.

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Introduction: Telemedicine and 2020

Over the past year telemedicine has grown to make up approximately one-third of doctor visits. Virtual visits with health care providers have increased in use ten-fold since before the pandemic (Healthcare Dive 2020; Harvard Health 2020). As a result of the Covid-19 public health crisis, telehealth technologies have been ushering in a new age of medicine allowing patients to “zoom” with health care providers around the world and order prescriptions online as easily as shopping on Amazon.

Prior to the events of this past year, a typical visit to the doctor might have been scheduled via phone call, taken place in the doctor’s office or clinic, and followed up via email. In light of the ongoing Covid-19 public health crisis, most medical practices have had to integrate as many online services as possible to decrease face-to-face interactions in an effort to control the spread of the virus. As much interaction between the patient and the provider that can be done without being in-person and without harming the quality of care is now occurring over video calls or in other online forms (Hollander 2020; Portnoy 2020).

Like all other fields in healthcare, reproductive health and sexual healthcare has also integrated more online services in the face of the pandemic. Both primary care providers and OBGYNs have started to schedule portions of their visits that do not require in-person examinations to take place over video chat. Prior to the pandemic however, reproductive, and sexual telehealth apps such as Nurx, The Pill Club and LemonAid, to name a few popular ones, had already allowed patients to be prescribed resources such as birth control, Plan B, STI screenings, etc. completely online and through applications on their cell phones. These applications also had prescriptions delivered right to the patient’s door, never having to step foot into a doctor’s office or pharmacy.

Telehealth apps like these were created with the hope of increasing access to reproductive health services for people who are in rural environments, or who face challenges visiting doctors (Zuniga et. al. 2019). Providers like Planned Parenthood have also been able to conduct consultations with patients and provide medication abortions, cutting down travel time and providing easier access to early abortion for rural patients (Grindlay et. al. 2012). And doulas, who play an incredibly personal role in a mother's prenatal healthcare, have also been able to begin offering their services through telemedicine (Searcy 2020).

Telehealth is being used to further reproductive and sexual health education in school sponsored programs (Singh et. al 2017) and online over health education websites. E-health technologies such as smart watches, wearable health devices, and phone health applications further patient access to medical knowledge and information about their bodies. Given this prominent integration of technology and online resources in healthcare, what does it mean to be a patient in Covid-era America? How are the typical social interactions embedded in the healthcare process being affected? How does the patient-provider relationship change?

The aims of this research originally began in the interest of examining new reproductive health and sexual health phone applications and websites designed for patients in the United States to be able to receive quick consultations and prescriptions delivered straight to their homes. With the ongoing pandemic disrupting many facets of day-to-day life, medical practices began to integrate more telehealth services into their care, and it became clear that this study should expand to examine the broadened use of telemedicine and e-health technologies as a response to the Covid-19 pandemic as well. Thus, this research aims to explore the impact that integrating telecommunication into reproductive healthcare practices has on patient experiences and how online interaction impacts the doctor-patient relationship. I also analyze the effect that

e-health technologies increase access to patient medical knowledge and influence their perception of reproductive health.

What is E-health, what is Telemedicine?

Before going any further, it is useful to specifically define the terms telehealth, telemedicine, and e-health, as each term has a slightly different meaning. The terms are often used interchangeably, but for the purpose of clarity in my writing, I will be using the definitions that the American Academy of Family Physicians provides on their webpage. Telemedicine as defined by AAFP is “the practice of medicine using technology to deliver care at a distance. A physician in one location uses a telecommunications infrastructure to deliver care to a patient at a distant site” (AAFP 2019).

Though our idea of telemedicine as of late revolves around the use of smartphones and laptops, the concept has been around for quite some time now. Communicating with telephone calls, text messages, emails, and faxing information all qualify as “telemedicine,” so in this sense, telemedicine has been in use since as early as the 1870’s when telephones were first introduced and integrating more and more at a slow and constant pace as technology advances. Other early examples of telemedicine usage include the invention of the telecardiogram in 1906 and the use of radios to give medical advice to clinics on navy ships in the 1920s (Nesbitt 2012). By 1948, radiologic images were being transmitted by telephone between West Chester and Philadelphia, Pennsylvania (which is 24 miles apart) (Nesbit 2012; Gershon-Cohen and Cooley 1950). And, by 1959 video communication began to be used by clinicians at the University of Nebraska, who used two-way interactive television to transmit neurological examinations and other information across campus to medical students (Bashshur et. al 1975; Nesbit 2012)

Telemedicine differs from the term “telehealth” because it specifically refers to remote clinical services whereas telehealth refers broadly to “electronic and telecommunications technologies and services used to provide care and services at-a-distance” (AAFP 2019). Telehealth for example, would include the ability for a patient to log into a patient portal and schedule an appointment as well as their ability to video chat with their doctor, and then access useful health websites (AAFP 2019; Lupton 2014; Wootton 2017). Telemedicine, however, would only refer to the video call between the patient and the provider.

On the other hand, e-health, or digital health, are both broader terms encompassing both telemedicine and telehealth but also including health technologies that use the internet such as medical websites and health devices (Lupton 2014; Wootton 2017). Deborah Lupton analyzes the impact of e-health on healthcare in her work “Critical Perspectives on Digital Health Technologies” and defines it to include “Biometric tracking, patient self-care and monitoring devices: apps, smartphones, smart objects and wearable technologies for monitoring and tracking bodily functions and activities” (Lupton 2014). I use these two terms “e-health” and “digital health” in my discussion of health technologies that patients may use to monitor their body and learn medical information, but not necessarily use to communicate with their health care providers.

Telemedicine Usage During Covid-19

While the technology to support telecommunication between physicians and patients has existed and has been expanding for years, telemedicine was used in the United States to a far lesser extent prior to the pandemic. Before this past year, there were numerous restrictions on the use of telemedicine legally and financially. While personal e-health technologies prospered in their

use, telemedicine had many restrictions due to questions of liability, quality, privacy, and reimbursement. With the need to seriously cut down on social contact and the massive stress placed on healthcare workers due to the pandemic, many providers turned to telemedicine services and since then, much government and health insurance company policies surrounding the use of telemedicine and telehealth services have expanded (Calton 2020; Hollander 2020).

Why did the country need to undergo a pandemic in order for telemedicine to kick off? Besides the general technological challenges of providing healthcare online such as accessibility for patients (internet and computer/phone access) and the physical limitations providing care virtually, telemedicine had clear potential pre-pandemic as a useful tool for patients and providers. Its growing use for mental health visits highlighted its ability for virtual communication between health care providers and patients to successfully replicate in-person conversation (Umoh 2019).

One reason why telemedicine was not commonly used beyond mental health services prior to the pandemic is because, while most virtual mental health services were covered out-of-pocket, most insurance companies did not cover telemedicine services (Portney 2020; Wootton 2020). State licensure laws also dampened interstate care, preventing physicians from treating patients outside of their state (Caltton 2020). Questions of data confidentiality also challenged medical practices who did offer video visits to make sure the video communication platforms they used were secure to comply with HIPPA laws (Jalali 2020; Hale 2020). The possibility of hacking into patient portals and unsecure video technology held most practices back from offering the service.

Since the onset of the Coronavirus pandemic, both private and public insurances have altered their policies defining the types of telemedicine services they cover in order to better

enable social distancing. Insurance companies began to reconsider how much interaction is necessary between doctors and their patients to qualify as a coverable medical service and how much face-to-face contact and in-person contact is required for prescription write ups (FSMB 2020). Medicare & Medicaid Services (CMS), for example, broadened access to telehealth services under the 1135 waiver authority and the Coronavirus Preparedness and Response Supplemental Appropriations Act at the beginning of March 2020. Under the 1135 waiver, Medicare claims to cover any “office, hospital, and other visits furnished via telehealth across the country and including in patient’s places of residence” (CMS 2020). Prior to this change, individuals covered under Medicare only were able to have telehealth services covered if they lived in a designated rural area or if the service was offered in a medical facility (CMS 2020). With insurance companies increasing coverage of telehealth services, more patients were able to start taking advantage of doctor’s offices who offered virtual visits.

Previously, most states required telemedicine companies to follow state licensure policy where doctors can only practice within their state. According to the Federation of State Medical Boards, “Forty-nine state boards, plus the medical boards of District of Columbia, Puerto Rico, and the Virgin Islands, require that physicians engaging in telemedicine are licensed in the state in which the patient is located.” (FSMD 2020). Within the past year however, forty-one state boards have issued special purpose licenses or certificates allowing physicians to practice across state lines while using telemedicine (FSMD 2020).

Together, licensure and insurance policies have supported the increased use of both office-based telemedicine services and telehealth websites. This thesis explores how these changes to online platforms affects the patient experience of care. How are the social interactions between doctors and patients as well as with the nurses, physician assistants, and

other providers that are involved in the health care process impacted? And, what populations might be left out in this move to telehealth? The sudden increase in the use of telemedical technologies during 2020 allows an excellent opportunity to examine the potential benefits and challenges of integrating telemedicine and e-health technologies into our healthcare system, specifically focusing on reproductive and sexual health.

This study was completed throughout the height of the covid -19 pandemic and in effect I wrote it while watching our health care system remodel itself and adapt again and again over the course of about a year. This wasn't a history project where I poured through textbooks to find dates of policy change, but rather was forced to update my writing as I went because our health care system was simply changing that drastically. When Medicare/Medicaid opened its wallets to telemedicine, telehealth companies skyrocketed in their use and by fall, 'zooming' your doctor was really a normal thing to do.

It became such an everyday facet of life that I actually had to remind myself while writing this that just over a year ago meeting with a physician virtually (or video calling anyone other than close friends) was a completely novel idea. The country effectively flipped a switch and everything and everyone went online. Medicine did as well.

This work will explore how these changes shaped experiences of patients who utilized online care and what it means to be a patient in covid-era and post-covid America. The analysis is organized into three sections; 1. Telehealth, 2. Telemedicine, and 3. E-health, all specifically in the scope of how they are being used in reproductive and sexual health care according to the level of patient-provider interaction. Chapter 1 will begin with the first category, which discusses telehealth apps and websites that are solely internet based. These platforms have no in-person elements and utilize predominantly text-based interactions between patients and providers via

direct messaging. They effectively serve as a means for patients to purchase reproductive health care products and prompts the patient to take on a consumer type role in interacting with the sites. Chapter 2 then discusses telemedicine websites that differ in purpose to the telehealth apps discussed in chapter 1 by offering more in-depth care such as virtual visits. I examine how online consultations with these websites compare to virtual visits offered by primary care providers and analyze how the many differences in care contribute to their differing purpose and the reasons for which patients use them depending on the health concern and circumstances at the time. They function very differently and serve different roles. Telemedicine sites are not being used to replace primary care providers, but rather to offer triaging and immediate medical advice.

Within reproductive and sexual healthcare, many needs that are effectively met by telehealth sites include acquiring hormonal birth control/contraceptives, STI screenings, or “the morning after pill.”. These sites often improve patient experiences, given that they allow a certain amount of anonymity and due to the socially taboo nature of the product (Zuniga et. al. 2020; Grindlay and Grossman 2015; Weigel et. al. 2019). This study will in part focus on health care situations like these where fast responses from providers and anonymity of the patient are the most important characteristics of the patient’s experience. Other health concerns, though, might require more interaction with a doctor, which is where more communication and a good doctor-patient relationship is key. It is in these cases where more in depth interaction is needed, patients are more likely to use websites and physicians as discussed in chapter 2.

Finally, Chapter 3 focuses on personal health technologies used in reproductive health and sexual health. These technologies fall more accurately under the broader category of e-health than telemedicine as it includes health tracking devices, phone applications, and websites

used to monitor the body. These devices are used by the patient to monitor health data and little to no interaction between patients and providers are incorporated in its use. The data collected by the devices might be used by health care providers in adjusting treatment plans and making medical decisions, but the device itself is not used as a means of communication and, as such, does not fall under the previously defined term “telemedicine”. This chapter focuses on the widespread use of e-health technologies and the resulting demand on individuals to take responsibility and blame for the state of their health.

Literature Review: The Social Complexities of the Clinic

Models of Care

In my analysis of how communication technologies impact patient experience, I base my writing on a few models of care that have historically been used to characterize doctor-patient social roles. These roles characterize why and how doctors and patients interact with each other, particularly explaining who holds power and how it is used.

Within western biomedicine, a paternalistic relationship between the doctor and patient was seen as most common and required for proper care up until around the 20th century (Kaba 2007). In a paternalistic relationship, decision making is done primarily or completely by the doctor, and the patient is expected to comply to whatever treatment the doctor deems fit given their authority over the patient's health. The doctor utilizes their medical skills to choose the necessary treatments most appropriate for restoring the patient's health or easing their pain (Kaba 2007).

The paternalistic model is one in which the doctor acts like a parent of the patient, "articulating and implementing what is best for the patient" (Emanuel and Emanuel 1998). Physicians make most, if not all, of the decisions on the patient's behalf, assuming that their judgment is representative of the patient's best interest (Emanuel and Emanuel 1998). The physician informs the patient of a diagnosis or judgement and then explains the treatment plan, but there is less debate over whether that is the best course of action.

Over the past several decades, the doctor-patient relationship has been moving away from a traditionally paternalistic model and towards patient centered care, where decision making is shared between the patient and provider (Thompson and Whiffen 2018; Elwyn et. al 1999; Epstein and Street 2011; Emanuel and Emanuel 1992). In patient-centered health care, decision

making is shared between the patient and physician, and the patient is more involved in the conversation of the best treatment plan for them, and they are more active in monitoring their conditions (Epstein and Street 2011; Emanuel and Emanuel 1998; Whiffen 2018; Elwyn et. al 1999).

Overall, the patient has more autonomy in this model, which can improve the healing experience by establishing more trust with the patient. The patient is understood as a person “in context of their own social worlds, listened to, informed, respected, and involved in their care—and their wishes are honored (but not mindlessly enacted) during their health care journey” (Epstein and Street 2011). Patient centered care allows patients to more comfortably express their concerns and receive treatment plans that are more personalized to their needs-- physical and emotional (Elwyn et. al 1999; Epstein and Street 2011).

Teresa Hellin describes this shift from paternalistic to patient-centered care over the past several decades to be a product largely of increased patients' rights and health policy. Specifically, beginning with the outcomes of a large number of malpractice cases in the early 1900s, there was an increase in legislation on informed consent from patients as well as questions of medical ethics in response to inappropriate research practices (Hellin 2002). As a result, patients now have a greater ability to take legal action should providers make mistakes or abuse their position of authority.

The shift to patient-centered care has also been influenced by the United States' healthcare system and the economy. The private/employer-based insurance system in the United States pushes the patient to assume a consumer role, paying a higher price for physicians based on experience and reputation or based on how much their insure (Helin 2002; Emanuel and Emanuel 1998) or, leaving insured uninsured patients without care or paying out-of-pocket for

cheaper providers. The patient has autonomy to consult a range of physicians, choosing more highly accredited providers and “purchasing their care” which directs an amount of power away from the provider and towards the patient. Depending on the patient’s idea of appropriate treatment and interaction with the doctor, patient-centered care could benefit the patient’s healing experience. However, if the patient expects the physician to take more control, this model may be less assuring for a patient.

Examining Doctor-Patient Interactions

There are two prominent approaches anthropologists tend to use in examining doctor-patient interactions and relationships, which influenced my perspective while listening to interviewees. The first, the “explanatory model” approach, encourages the researcher to focus on how the patient and the provider understand health and illness in order to identify miscommunication and misunderstanding between the two parties (Kleinman 1978). A “model,” which is defined as “a belief system utilized to explain natural phenomena” in this situation refers to the understandings and meanings of health and illness, and the expectations for how an illness should be treated (Kleinman 1978; Lazarus 1988, 39). The explanatory model of the patient and the doctor could differ if they learned about the body and health from different schools of thought or if they come from differing cultural backgrounds (Kleinman 1978). If the patient’s understanding of health and expectations of how to treat an illness does not align with the physician’s biomedical training, then it will be impertinent for there to be even more communication to overcome these obstacles.

Ellen Lazarus has argued in response, however, that often patients with the same explanatory models as their physicians, expecting the same treatments and medical practices, are

still unhappy with the care they received (Lazarus 1988). This discrepancy could be because the explanatory model doesn't look enough at the actual interactions that the patient has with the doctor but more at the contradicting belief systems of the two individuals. Lazarus proposes instead that the "critical medical anthropology" approach examines the relationship, taking into account the social structure of the medical system and society and the social positions of the provider and patient (Lazarus 1988). This approach focuses more on how political and economic determinants within society are clearly present and replicated in medicine. The interactions between patient and provider are significantly impacted by the patient's and the provider's positionality within the hospital and within society at large.

The critical medical anthropology model as a result identifies the importance of understanding the control of power between the patient and the provider as a result of race, class, gender, etc within their given social context. Lazarus writes, for example, that in capitalist societies such as our own, the "key relationship in medicine is between those who control medical care and the patients who consume it" (Lazarus 1988, 45). The capitalistic nature of our country has, as a result, determined the amount of control doctors, hospitals, medical schools, health insurance corporations, pharmaceutical and medical equipment suppliers etc., have over consumers (patients). In the US healthcare system, there is clear power imbalance between patients and providers due to control of medical knowledge, prescriptions, and treatment.

Power

Harold Grimen's discussion of power imbalance between medical professionals and patients as explained in his article "Power, Trust, and Risk" has contributed highly to my perspective in analyzing interactions and the use of power within this research. Grimen argues that while

health professionals do hold power in provider-patient interactions, they are socialized to view themselves as “beneficial helpers” rather than “gatekeepers” or “controllers” (Grimen 2009). The fact that providers might not understand the amount of power they can wield harms the quality of care as the patient, due to the structure of our modern healthcare system, is in a structurally inferior position. Patients as a result have less basis for challenging a physician’s judgment, and the physician may not be aware of that fact (Grimen 2009).

Grimen utilizes a critical medical anthropology approach in analyzing doctor-patient roles in noting that while providers are beneficial helpers, they are just as well, powerful gatekeepers to medical knowledge and aid which the patient would not otherwise have access to. It is important therefore for providers and for society in general to recognize that fact, so that the provider can give care while being self-aware of how much trust their patients are putting on them, and how much influence they can have, negative or positive (Grimen 2009).

What causes this power imbalance and how should providers work to combat it? As professionals, Grimen explains that medical providers are assumed to have superior knowledge on matters regarding the body and health. To compound that, the field of medicine is so vast that there is an incredibly large knowledge gap between health care professionals and patients. This forces the patient to place their trust in the judgment of the doctor due to their lesser amount of knowledge base that might have enabled them to question it (Grimen 2009).

Grimen also points out that interactions between patients and physicians often occur during times in which the patient is not feeling like their normal self. Often, patients talk with physicians when they are ill, weak, and stressed, so the patient may not be at their strongest to command more time and information. It is also always the patient that is waiting for the doctor’s time and attention for visitations to take place. Busy doctors only have so much time to allot to

each patient, especially in hospital settings. And long wait times seem to reflect a prioritization of the doctor's time over the patient's (Grimen 2009).

To further develop my conceptualization of a power differential between the patients and healthcare providers, I also base a lot of my analysis of power on Pierre Bourdieu's social theories of symbolic capital, cultural capital, and economic capital. I use these theories as lens to explain underlying influences in the social positions of doctors and patients and how that reveals itself through their interaction. Upon understanding what fuels the power dynamics of patient-provider interactions, I draw on these theories as a lens to examine how power shifts in the context of an online interaction and as patients begin to have access to cultural capital originally obtained only through medical training.

The Medical Gaze

The last theory I base much of my analysis on is the "medical gaze." Michel Foucault's theory of the medical gaze is proposed in his work, *The Birth of the Clinic*, in which he explains social and historical context in which doctors, through the process of their medical schooling, began to view patients as just a body, an object of scientific process, rather than as a person (Foucault 1975). Far removed from the patient and their experience of sickness, the medical gaze refers to the way doctors objectify the patient's body and analyze illness as a matter of incorrect functioning. In a traditional clinical setting, the doctor examines the patient's body and analyzes their past medical history to diagnose an issue. I argue that the implementation of telemedicine and e-health technologies causes patients to utilize the medical gaze on themselves as a perspective of their own body, creating a divide between self and body.

Rituals in Healing

In examining the different structures of online versus in-person healthcare, I look specifically at how ritualistic interactions and tasks are impacted by the shift as well as symbolic imagery traditionally seen by the patient in clinical settings. Symbolic interactions and repetitive imagery that patients tie to normal visits with their physician contain connotations and meaning (Blumhagen, 1979) which impacts the patients' perspective of the visit itself. For example, Dan Blumhagen has revealed the deep and layered symbolism attached to the doctor's white coat which is interpreted as a representation of the physician's authoritative role in clinical settings (Blumhagen 1979). The white coat uniform donned by physicians is representative of their medical knowledge and hierarchical position within the clinic or hospital.

Blumhagen proposes that these symbols associated with physicians, such as the white coat, the stethoscope, and the doctor's stereotypical black leather bag, can be reassuring to the patient because they associate them with the learned image of "the doctor." In seeing these symbols, the patient reads the doctor as an authoritative figure with the knowledge to provide aid and is thus therapeutic to see. Daniel Moerman has built on this idea that having a reassuring interaction with physicians as representations of authoritative individuals on the topic of health creates essentially a placebo affect for the patient. Because their advice is backed by science, their opinion is respected (Moerman 1998). This idea will come into play in my research here because telemedicine was created with the goal to better enable doctor patient communication. The question is whether telemedicine effectively reproduces the many symbols and ritual practices that in-person care creates provides and which serve as important therapeutic qualities for the patient.

Methods

The majority of the data I collected for this study was from interviews of patients and providers. These were patients who have used telehealth apps such as Nurx, Lemonaid, the Pill Club, or Virtuwell, patients who have used telemedicine websites to video chat with doctors such as Doctor on Demand and Tela Doc, as well as patients who utilized online services integrated into their regular physician's practice. I also interviewed providers who work with telehealth apps or who have started using telemedicine in their practice due to Covid-19, and lawyers who have worked in the health policy arena and discussed with me the changes in insurance and state policy on telemedicine services in the past year. These interviews took place over video conferencing and phone calls and lasted about 30 minutes to an hour.

I recruited interviewees through Facebook posts published on my personal page and shared by friends. I also published recruitment posts in a student group for Swarthmore College and three Facebook groups used for women's health discussions. I used snowball sampling following interviews to recruit additional participants. Given the way I recruited interview participants, my data is biased towards members of the Swarthmore College community and friends of my friends (along with a select amount of women who volunteered to be interviewed from the women's health groups on Facebook). I recruited providers for interviewing through company emails listed on various platforms' websites and clinic websites.

In my analysis of telemedicine and e-health technologies I examine how recent healthcare changes enable patient-centered care. The distinction between paternalistic and patient-centered relationships provided a basis in the interview process to see how telemedicine has impacted patient involvement, decision making and communication between the doctor and patient. I

asked participants for example, if the doctor was helpful in answering all of their questions and how receptive they were to the patient sharing opinions and concerns on treatment plans.

I lastly use analysis of each of the websites and telehealth application discussed throughout the work including Nurx, The Pill Club, Simple Health, LemonAid, TelaDoc, MDlive, and Doctor on Demand in order to examine how telemedicine enables patients to adopt consumer type roles based on how the telehealth site adopts a market style approach to their care.

Chapter 1- Telecontraception

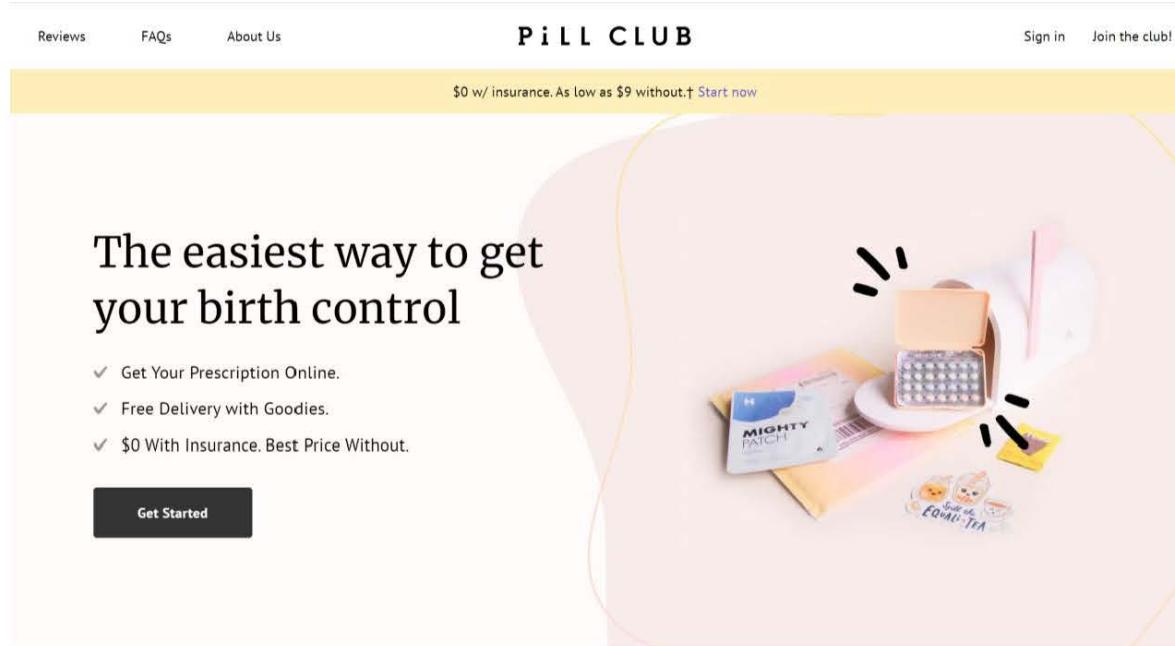


Figure 1.1 The Pill Club Website Homepage

Pictured above in Figure 1.1 is the website home page of the online-based reproductive healthcare company, The Pill Club, which prescribes and delivers birth control methods to patients within the United States. They describe themselves on their page as being “just like your local pharmacy, staffed by licensed pharmacists and offering the same FDA-approved birth control. We carry the Annovera ring, emergency contraception (the morning-after pill), the FC2® Female Condom as well as the most popular birth control pill brands and their generics” (The Pill Club 2021). The Pill Club is one of the most popular telehealth companies devoted to reproductive healthcare that I encountered in my research and over the course of the past year (2020) grew from providing to 7 states to all 50.

This study was originally inspired by the large amount of telehealth websites that offer reproductive and sexual health care such as the Pill Club as mentioned above, which function

primarily with the goal of providing better access to contraception options and sexual health screenings and education. Birth control specifically has a large range of websites dedicated to prescribing and shipping contraception options to customers. There are so many websites in fact dedicated to online birth control prescribing that they have their own telemedicine category called "Telecontraception", as coined by a WebMD article written in 2019 (WebMD 2019).

As of right now, all forms of birth control- with the exception of male condoms- must be physician prescribed¹ (Planned Parenthood, 2021., Vivian, 2016), creating a competitive market for telehealth sites to offer faster, consumer focused options to beat the lengthy process that visiting your primary care requires. Although some forms of birth control like IUDs and implants require the patient to go to the doctor's office, other forms which require less invasive implementation like the pill, or the vaginal ring can simply be delivered to the patient.

Why Telecontraception Sites Exist

Websites such as The Pill Club, Pandia Health, and Simple Health all are designed to prescribe contraception for patients in a matter of minutes while other websites like Nurx.com also offer emergency contraception, STI testing, and HPV screenings. I include in this category telehealth websites like Lemonaid Health and Virtuwell as well which are part of even larger online platforms that cover products for a range of primary care needs but operate in a similar manner, functioning as a quick and easy route to access prescriptions and health care products.

¹ In the last five years California, Colorado, Hawaii, Oregon, New Mexico, Maryland, Tennessee, and Utah have all changed policy around birth control access and now allow for pharmacists to prescribe hormonal birth control options like the pill and the patch. Within this upcoming year, D.C., Minnesota, New Hampshire, Virginia, and West Virginia, are expected to begin similar prescription programs. The first state to start using the "pharmacy access model" was Oregon in 2015. Since then, "10% of all new birth control prescriptions have been written by pharmacists" (GoodRx 2020, Grindlay 2020).

I categorized the experience that patients had with websites like these together because they do not require much interaction between the patient and providers working with the company. Instead, the patient uses the websites or phone application to quickly order their prescription and have it mailed to them. These websites advertise the promise of quick and easy care as advertised in the Figure 1.2 below, and participants who used apps like these explained this to be the primary reason for them choosing to use it.

The screenshot shows the Nurx.com homepage. At the top left is the Nurx logo. Below it is a section titled "EASY AS THAT" with a sub-section "Save time and money ordering birth control online, with free shipping in discreet packaging." A "GET STARTED" button is present. To the right, there's a comparison chart:

ONLINE	IN-PERSON
<ul style="list-style-type: none"> ✓ Request a prescription any time, day or night. ✓ No time away from work or life. Message our medical teams as much as you want, on your schedule. ✓ Get your birth control delivered to your mailbox. ✓ Save money on added costs. ✓ Prices clearly listed on our website. 	<ul style="list-style-type: none"> ✗ Wait 24 days (on average) for a doctor appointment. ✗ Spend 2 hours (on average) getting to and from an appointment and waiting for the doctor. ✗ Wait in line at the pharmacy to pick up your prescription. ✗ Pay for transportation and parking to get to the doctor and pharmacy. ✗ Unknown pricing until you pick up your prescription.

Figure 1.2 Nurx.com website homepage

Nurx promotes its services to potential clients by pointing out commonly experienced challenges women face when seeking to get a birth control prescription through a doctor and how online prescribing and delivery combats that. Their page promotes flexible ordering for the patient, who can order a prescription whenever and wherever they choose, as well as time saving. As touted on Nurx's website and confirmed by patient interviewees, ordering birth control online is an easier and quicker method because patients do not have to wait for a scheduled appointment to meet with a doctor and have the prescription sent to a pharmacy and travel to pick it up.

As a student I interviewed from Swarthmore who uses Nurx explained, the primary reason she began using Nurx was because of the time it took her to get a birth control prescription from her physician back home. She explained, “The main thing was having to do a whole doctor’s visit to set it up and then have to drive to my pharmacy every month. It was really nice not having to leave the Swarthmore bubble to pick it up from a pharmacy.”².

It was a hassle for her to visit her doctor who was over an hour away (from campus) and having the prescription delivered was an added bonus as getting to a pharmacy near her campus was challenging.

In the context of traditional in-person clinical care, patients typically have to schedule an appointment far in advance of the actual date of the visit, and once the day of their scheduled appointment arrives, they often must wait for their doctor to finish with other patients. When using services like Nurx, patients can avoid these hassles and the product is sent directly to the patient immediately after they fill out a questionnaire of what they are looking for. This promise of faster service is made possible because telehealth apps focused on prescriptions are providing medications and testing that require less in-depth interaction between the patient and the provider. The patient is not physically examined or having lengthy conversations on treatment plans and solutions (Cassell 2020).

How Telecontraception Works

Across these platforms the general process for obtaining products begins with a consultation that for most of these websites is just online forms asking about past medical history, lifestyle, and preferences of the patient regarding the product or prescription. These original “consultations”

² Interview with Sally, a 21-year-old college student who uses Nurx

cost between \$15-25 for Nurx, The Pill Club, Simple Health, Pandia Health and LemonAid Health and take about 10 minutes to fill out. One college student I interviewed, Jillian, described the online form which substitutes for an in-person consultation on Nurx in the following way: “basically I had the option to choose specific prescriptions or have them prescribe me something based off of a survey. So, I filled that out and it asked me about my history with like weight and acne and my mood and then like what type I was looking for, like birth control or the ring.”³ Jillian said she paid \$20 for the survey and then \$10 a month for the oral contraceptive prescription itself.

Most communication about these products can happen in direct messaging services that these platforms utilize to answer patient questions. This functions well for patients who know what prescription they want. For example, Charlotte, a 22 year old recent college graduate, who uses the Pill Club noted, “I already had a prescription that I was using but I had to meet with my doctor every time I wanted to renew it, so I just ordered that on the site.”⁴ Because Charlotte already had a prescription, she was able to order her original prescription and spend less time on the repeat, follow up consultations.

Virtuwell is the only website in this category that I analyzed that approached reimbursement more similarly to an in-office visit in terms of how they charged. The “consultation” occurs like the other websites through instant messaging but the site charges \$59 per consultation. Virtuwell claims that users can pay per consultation or use their health insurance to cover this fee. It seemed that what allowed Virtuwell to charge customers in that way was the fact that providers were available 24/7. So, unlike other sites, if a patient had a concern and wanted to speak over the phone with a provider at any time, they could.

³ Interview with Jillian, 22 years old, uses Nurx

⁴ Interview with Charlotte, 22, uses The Pill Club

The other telehealth websites mentioned above which charged just for the original consultation and then per prescription did not tend to immediately respond and would send automated messages if a nurse or physician did not reply within a few hours. Amanda, a college student using the Pill Club explained that when she had questions, “you’d like text the general number and then they would sort of send you like an automatic response. Like, ‘Oh, we have a wait time of such and such’ and then eventually a person will get back to you and I’m pretty sure it was different people every time.”⁵ Amanda’s explanation highlights a more impersonal approach to healthcare which is less common in family medical practices. Unlike in-person practices, patients pay the price of personal relationships with the healthcare staff in exchange for round-the-clock responses service.

Instant messaging with providers proved especially useful this year amidst the pandemic for patients who wanted to minimize contact with other people making visits to their doctor’s office unappealing. Sally, a college student who uses Nurx explained that she enjoyed now having to make a visit to her physician when she had a question relating to her birth control and was able to instead simply write in the app’s chat and have a nurse respond soon after:

... now with Covid like it’s nice not having to worry about having to visit my doctor when I have a question about it [birth control prescription]. Like, this may be a bit TMI but like I hadn’t gotten my period in a while, I still haven’t, and I looked up my birth control, and it says that’s normal but I just wanted to check with someone, like just to confirm with a doctor, and this was earlier in like March when everything was crazy right? So, I was able to just message Nurx and ask them. And I think like a nurse got back to me like a day or two later and said like ‘yeah that’s totally fine, that’s really typical with the brand that you use.’⁶

Instant messaging with providers is not a typical option for patients communicating with their normal physicians and they instead must either call the practice and leave a message with the

⁵ Interview with Amanda, 20-year-old College student, uses The Pill Club

⁶ Sally, 21 year old college student who uses Nurx

clerical staff or schedule an appointment in-person to discuss the question with their doctor. This was proved especially useful this past year for patients not only time wise, but also in allowing them to socially distance and avoid medical facilities amidst the pandemic.

The price of the prescription then depends on the patient's insurance or the company's flat fee. The Pill Club, Simple Health, Pandia Health and Nurx.com all operate in a very similar way. They charge around \$9-\$15 for generic brand birth control prescriptions or more for name brand. Alternatively, patients can use their health insurance to cover the cost which can bring the prescription price down to \$0. The extra price for brand name prescriptions is typical regardless from where the prescription is received. Yasmin, for example, is a name brand prescription that will cost \$20 per package sent even with insurance at Nurx.com or, about \$13 for its generic prescription formula Drospirenone-Ethinyl Estradiol (Goodrx 2020, Nurx.com 2021).

The product then is prescribed to the patient by a member of the company's medical team and delivered to the patient's home, shipped in discreet packaging. This was the general process for The Pill Club, Nurx, Simple health, Pandia health Virtuwell, Lemonaid, and Hello Alpha. The platforms are user friendly and easy to navigate, making the process quick and simple. One college student I interviewed who used The Pill Club explained that the company also sends her stickers and a candy every month when they send her her prescription.

Simple Health's page visualizes the prescription process in figure 1.3 below comparing it to the more extension steps required for obtaining a prescription through a typical physician.

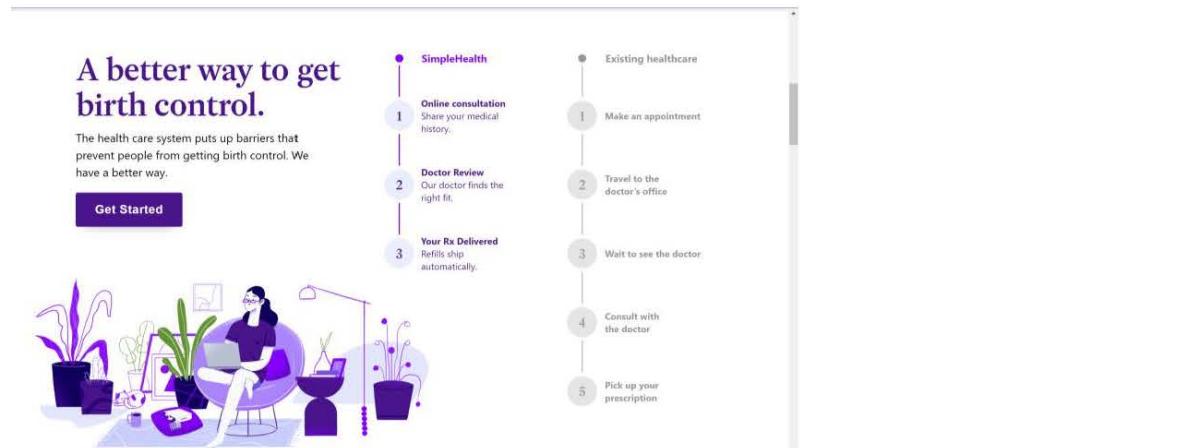


Figure 1.3 Simple Health’s website summarizing the prescription and delivery steps of ordering birth control through their service compared to the steps required for in-person care.

Attraction of Online Ordering

Having this alternative way of receiving a prescription gives choice and more control to the patient because they can decide between using doctors other than those who are in their local area. For example, a number of my interviewees were college students who alternate between living at home and living on-campus. Sally, a student who started a subscription with Nurx while at school explained, “I think there is a way to get it from Worth (the campus health center) but I had already gone in months before and the woman I met with was really promoting the IUD. Ordering it online gave me more options too than Worth once I looked it up.”⁷ Using an online service was more appealing to students who didn’t want to find a new primary care provider near their school or didn’t have good experiences with their campus health-center.

Sally also explained that it was important to her that the packaging that was sent did not make it obvious that it was her birth control prescription. Sally had to pick up packages from the

⁷ Sally, 21 year old college student who uses Nurx

campus post office compared to when she was at home and her prescription was delivered right to her door. Sally explained that she had peers who worked at the post office and wanted the packaging to be discreet: “the company sent like not awkward looking packages. I can pick it up from the Swarthmore post office, and not feel like, ‘Oh my gosh, the entire campus is watching me carry like, you know, a giant box of birth control back to my dorm’ or whatever.”⁸ Discreet packaging provides privacy to patients like Sally who order birth control prescriptions online. This is ideal on a small college campus where students are likely to see peers when picking up their mail from the campus mail center.

Patient-Provider Communication: Anonymity and Fast Response

In the telehealth apps I focused on (Nurx, the Pill Club, Pandia, Simple Health) there is no face-to-face interaction at all. The patient simply fills out a questionnaire asking about previous medical history, blood pressure, and what medication they are looking for and then fills out their preferred mailing address and insurance information and the product is sent to them. If the patient has any questions, they send a message via an instant messaging portal on the company’s website. If the provider has a question or follow-up they reach out via messaging as well.

Communication via instant messaging provides an opportunity for patients to speak with providers in a less personal or intimate manner. Patients who are more comfortable asking their questions with messages rather than face to face can receive care without having to interact in real time with another person. Instant messaging is particularly useful for patients who find talking about reproductive health and sexual health topics with other people to be uncomfortable.

⁸ Interview with Sally, 19-year-old college student, uses Nurx

It also draws in users who have had uncomfortable experiences with healthcare providers or just wish to avoid discussion of sexual health and reproductive health with their physician.

For instance, one of my interviewees, Amanda, explained that she started getting her birth control prescription from The Pill Club in high school because of her experience with her primary care doctor. Amanda's physician was the pediatrician that her family had used all her life. When she brought up her desire to go on to birth control she explained that they reacted inappropriately and made her uncomfortable,

[with] my pediatrician... I had had some interactions with their office, where they had been like kind of weirdly slut-shamey. Phrasing questions, like 'Oh, you're not sexually active. Are you?' and [I was] like, 'um, yeah?' Like one time I got a UTI and they were like, 'Oh, it must be from, you know, sex' And I was like, literally look at my medical record and you'll see I've been prone to them since I was like four years old, like leave me alone and give me antibiotics."⁹.

Although Amanda had a good relationship with her doctor, she didn't feel comfortable with their practice's handling of reproductive health concerns and so she decided to order her birth control from the Pill Club. For Amanda, the distance the online service provided was preferable: faster and less frustrating than seeking out and talking with another physician.

Beyond the convenience and ease of using telehealth sites to access reproductive health products, the minimal relationship and limited communication that patients and providers have through on the sites creates a situation where health issues may be easily overlooked. One drawback, for example, with online companies is that they don't have access to patients' expansive medical history that a primary care physician's practice might. Primary care providers normally have on file detailed medical records for the patient that would better help in

⁹ Interview with Amanda, 20 yr old college student who used The Pill Club

prescription and monitoring of the patient. Even if the patient has not used that provider for much time, records are usually shared from old providers to new as the patient moves.

This is not the case for telehealth apps and websites, however, which creates a situation where important aspects of a patient's medical history could be overlooked. The patient might not remember to include on the basic questionnaire they fill out small details that may actually be very relevant. Theoretically patients are also able to deliberately leave out medical history that might prevent doctors from prescribing what they went on the site for.

For instance, if a patient has a family history or personal history of blood clotting or are about to have surgery, smoke, etc, their physician may warn them away, or at least warn them of an increased risk of blood clots with starting a hormonal birth control containing estrogen (American Family Physician 2010; American Heart Association 2021). Telecontraception sites like the PillClub, Simple Health, and Nurx rely on patients to recall and personal medical history and self-report data such as blood pressure readings from their last clinical visit which may not reflect the patient's current situation.

These sites also do not seem to follow up with their patients after prescribing the medication or sending at-home tests. This neglect places the responsibility on the patient to initiate contact with the app when there are negative side effects or issues with the prescription. Hormonal birth control, for example, has several possible adverse side effects which should be monitored such as an increased risk of high blood pressure and blood clots. It also may cause hormonal changes causing weight gain, mood changes, acne, etc. (Womens Health 2016; American Family Physician 2010) and it is traditionally the doctor's responsibility to make sure the patient comes in after some time to track any changes.

Women who are prescribed birth control with a traditional doctor typically are scheduled to have a follow up consultation about 2 months after starting a new birth control prescription. This follow-up is to see if the prescription is working well with the patient's body and lifestyle and to confirm that there aren't any changes in the patient's health status. The physician will typically take the patient's blood pressure and weight. They would also confirm of any changes in medications as new prescriptions might impact the effectiveness and safety of the birth control (CDC 2019).

When patients communicate with providers on telehealth apps, they typically talk with a different person each time. The patient is treated more as a customer who purchased a product than a patient who is familiar with their providers. The patient is not creating stable relationships with any one provider, but with the app as a whole, so they generalize their feelings toward the platform rather than a single provider. This is not necessarily a bad characteristic of the company's care as it seems the patients who use platforms like these enjoy the anonymity that the process allows for.

The generalized care lacks the attention to detail that in-person offices provide however, which presents the possibility for medical issues to arise and be left uncared for. This in effect places more responsibility on the patient to monitor their health and be aware of potential negative reactions to prescriptions they order which is less of a requirement for patients who had their prescription written by a family doctor.

Cost and Competition

How does ordering a birth control prescription online compare to getting one in person pricewise? Most patients using these sites are able to have their insurance cover the cost of the

prescription itself but must pay out of pocket for the “consultation” (original questionnaire) as well as the cost of shipping. These sites also operate like a subscription for their patients. Patients pay for the original consultation and then they (or their insurance) pay each month for the pill pack (or vaginal ring, etc.). Patients then must also pay each year for another “consultation” which includes an additional survey where the patient “renews” their prescription.

These subscriptions are alarmingly difficult to terminate. One of my interviewees Amanda, explained that with The Pill Club, the company’s cancellation policy was very dragged out for her. She explained that compared to the quick responses by providers and ease of product ordering, once she had a prescription it took her a long time to get the company to cancel it. She said;

... the only thing that actually did take a really long time was when I was trying to cancel it [the prescription]. Um, for some reason that ended up taking like more effort than I thought it should. I even already had a different form of birth control [by the time they completed the cancellation request] and they were like, are you sure you don't want it still? And I was like, yes, yes I'm sure!¹⁰

Mary, another college student who was using Nurx.com noted a similar frustration,

Canceling was kind of annoying actually. It was like Fabletics or one of those [subscription] brands. They kept sending me emails like ‘don’t forget to renew your prescription!’ when mine was about to expire. Because you have to renew it every year, and they charge you another \$20 for the survey. And then when I decided to go back to just having my regular doctor prescribe it and I didn’t renew my prescription with Nurx, they still kept emailing me afterwards saying like ‘remember to update your prescription!’ And then like ‘are you sure you don’t want to keep using Nurx?’¹¹

For a medical company that prides itself on its quick customer service, it is concerning that once the patient wants out, that they become unresponsive. And, that they would berate them so forcefully to continue buying from them.

¹⁰ Interview with Amanda, 20 yr old college student who used The Pill Club

¹¹ Mary, 18 yr old student, used Nurx

If a traditional physician office were to do this, they would most likely lose patient trust as the action clearly communicates that the company's priority is profit rather than their patient's health. Patients would begin to question whether their doctor is proposing treatment based on their actual health needs or based off of possible reimbursement by insurance.

Another questionable characteristic of ordering through Simple Health, Nurx, The Pill Club, and other telecontraception apps is the fact that users only receive a one-month supply for their birth control at a time rather than in bulk. It is also difficult for a patient to request an order in advance or request that the company sends more than a one- or two-month supply. This presented a problem especially for the college students I interviewed because they would bounce back and forth between college and their home, so they weren't always on campus when their prescription arrived.

One student I interviewed, Betty, explained that while using Simple Health, she has had to redirect her order every time she is off of campus, or ask them to send the prescription early;

... the only thing that was not convenient was if I was going between campus and my house. I would have to try to count ahead and figure out if my prescription for example will run out in November and if that will happen over Thanksgiving break. If it does then I'd just be stuck without my prescription which would be rough because I would get out of sync and be unprotected for a bit. But yeah, it's hard to order it early.¹²

In this respect, telehealth companies are less flexible than in-person offices which often do allow patients to order their prescriptions for months at a time. Betty explained to me that by limiting bulk prescription shipping, the company can charge the patient each month. She explained that she couldn't order more than a 1- month supply in the app, but when she by chance had it

¹² Betty, 19-year-old college student, uses Simple Health

delivered to a pharmacy near her home, she was able to get the pharmacist to give her a larger order;

I was using a prescription that cost me \$25 per month and they were delivering to campus. When I went home for the summer, I changed my delivery address in the app to just pickup from CVS and when I went to pick it up one time, I asked the pharmacist if I could get it for like a 3-month supply. And they said yes! So, I was able to pay the \$25 for a three month supply rather than just one month. I didn't have that option within the app.¹³

Examples like Betty's highlight the fact that telehealth apps like these are indeed profit orientated. While telehealth companies are able to work as a more direct and quicker middleman between pharmacies and patients than physicians, in order to maximize profit, they offer more limited pickup options for patients than in-person offices do. Working with people in-person allows for more flexibility because people can work with you to create options rather than be limited to a set amount of buttons within the app.

Telecontraception sites such as Nurx, Simple Health, and The Pill Club provide a convenient way for patients to easily order birth control and at-home reproductive and sexual health products such as Plan B, STI screenings and HPV testing, many of which require a prescription or visit with a doctor to obtain. These sites save users time and transportation and as such make obtaining these products more accessible, especially for patients with limited physician options. The applications work with users who do not have insurance as well as those who do to make birth control and reproductive health items affordable. These factors along with the anonymous nature and hassle-free communication that patients are afforded with these sites enables patient accessibility and autonomy.

Telehealth sites like these also noticeably compete with each other to offer better customer experience in ordering the prescriptions, packing, the website aesthetic and gifts. They

¹³ “ ”

compete with who could provide coverage to more states in order to monopolize the market, and who offers more product options. The increased use and growth of telecontraception sites pushes the patient to take on a consumer type role, choosing companies based on what characteristics they value such as price, speed of delivery, communication with providers, etc. And pay out of pocket for additional fees such as shipping and consultation (which is normally covered to an extent by insurance for in-person visits).

This market style avenue for ordering prescriptions online appeals to patients who prefer the impersonalized, straight forward process compared to meeting with a physician, but it generates more room for medical issues to arise and be left untreated. Patients are expected to reach out whenever they experience problems or have questions, rather than the provider reaching out to check up on the patient's response to new medication. This places more responsibility on the patient to monitor their health and initiate medical care.

Chapter 2- Virtual Visits and Video Chatting

Before the implementation of telehealth visits during the pandemic, in-person clinics in the US limited their “telemedicine” use to patient health portals and appointment follow-up calls. Meanwhile, telemedicine websites like Doctor on Demand, TeleDoc, Amwell, MDlive, etc. had slowly begun to grow over the course of the last two decades (Gruessner 2015; Hollander 2020). One of the earliest telemedicine websites offering virtual consultations was Teladoc which was founded in 2002, followed by Amwell in 2006, MDlive in 2009, and Doctor on Demand in 2012. Other telemedicine websites have popped up since then, though I focus my analysis in this chapter primarily on these four companies. This next section will focus on telemedicine companies like these which offer broad primary care services and video consultations with physicians.

Teladoc’s first virtual appointments took place via phone calls and their services were subscription based. Typically, they were utilized by businesses who paid for yearly plans which were offered as a benefit to employees. Patients who received this benefit from their employer paid a flat fee of about \$40 for the consultation and were randomly connected to a board-certified physician in the state where they lived for a phone consultation (Goodman 2016). It wasn’t until around 2015 that telemedicine websites like these began offering video visits as it became more common for patients to have the technology to participate. Even still, it took time for more patients to take advantage of the option. While approximately 60% of adults in the US did have smartphones with video calling capabilities by 2015 (Pew Research Center 2019), only a small 10% of consultations made with TelaDoc used video streaming, with the rest still performed through voice call (Goodman 2016).

These days, “virtual visits” refer to consultations done over video call (rather than phone), whether it is scheduled with one’s primary provider or through a telemedicine website. How do virtual appointments compare to in person visits? How are the many interactions patients experience with administrative staff, nurses and doctors when they normally make a visit impacted? And, how do video visits with telemedicine websites compare to video visits made with a patient’s primary care provider? This chapter will compare the two types of visits, how they are used by the patient, and the different purposes they serve. Telemedicine websites do not exist to replace normal primary care providers, but instead provide triaging services to patients in order to determine the severity of health issues and how to deal with them in a timely manner.

Websites vs. Primary Care

Interactions between patients and doctors over telemedicine websites that offer virtual consultations tend to differ from those offered by clinics that are normally in person in conversation, pace, and tone. With website platforms, the patient will tend to only interact over video with the doctor they are assigned. The rest of the scheduling and follow-up information is communicated though emailing or messaging (Siwiki 2017).

Traditional clinics tend to provide a more personalized experience for their patients as they tend to have pre-existing relationships with patients that they want to sustain. Communication includes more phone calls with administrative personnel for scheduling as well as sometimes a video call beforehand with a nurse. Telemedicine websites do not include as detailed interactions because these websites normally do not operate with the idea that they are replacing the role of the patient’s primary care provider. The patient won’t be creating long

lasting relationships with their provider on telemedicine websites and as such the website does not place as much emphasis on making the experience personalized.

In an interview with Alexis, a college student who had used Doctor on Demand for the first time earlier this summer, she described her experience with using the company's phone application. Their front page is included below.

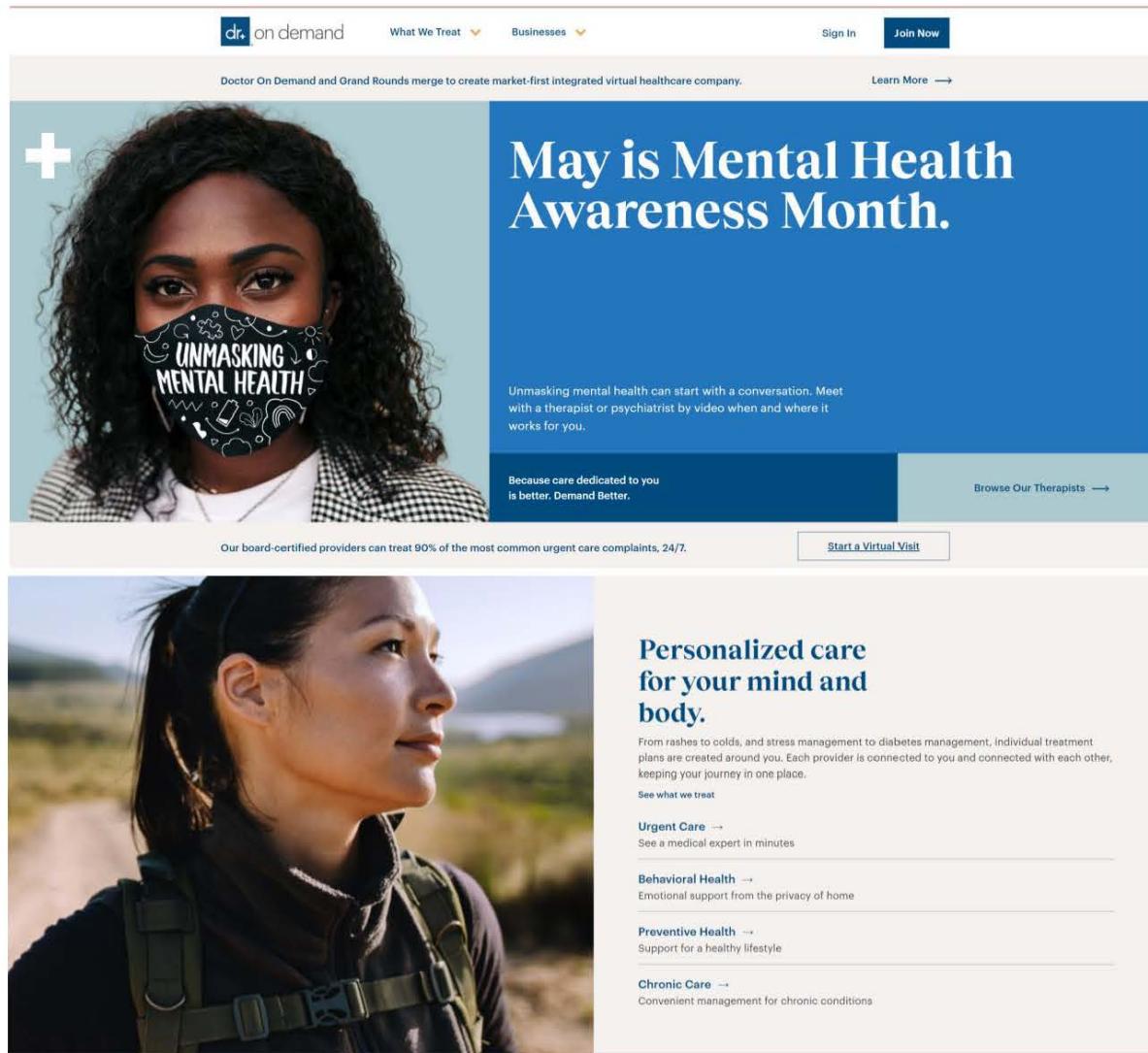


Figure 2.1 Front page of Doctor on Demand

Doctor on Demand is a telemedicine website that offers 15-minute virtual visits (video calls) with physicians who are available 24/7. They offer a range of primary care services and mental

health services and are one of the most well-known telemedicine sites. Their website says they offer urgent care, preventative health, behavioral health, and chronic care services. Alexis explained the process of using the site as follows;

... first you upload information about what you need to be seen for and then you kind of wait for a little bit. Then you wait for a bit and are cued up with a doctor. And then all of a sudden there's a doctor there just on your phone screen and it's like you're FaceTime-ing them. It's like, 'Oh, hello, dr. So-and-so, it's nice to, nice to meet you,' except there's like a 15-minute time on it. So, um, actually you have to move kinda fast.¹⁴

Because telemedicine sites also charge by time spent in a consultation on top of the base price per consultation, time spent with the doctor is more limited (depending on patient budget).

With Doctor on Demand, a 15-minute consultation costs \$75 and, according to Alexis, her doctor adhered to that time limit strictly. With doctors' offices, interactions tend to be more relaxed, giving the patient more time to think of any lasting questions and concerns. As Alexis described;

To me it felt like everything was down to business. Like 'we're here for this and this specifically, we're gonna just do what needs to be done.' Whereas I felt like, you know, if I go into my local doctor's office and I talk with the nurse or the doctor, or whoever's there, it's usually a lot more just like friendly banter you know. I'm able to joke around a little bit. There's that opportunity for small talk. Whereas this [virtual visit with Doctor on Demand] was very much like, 'okay. Hi. How are you? This is what's going on. blah, blah, blah. Follow up question, follow up, answer, question, answer. It's very much so like, what is the problem? Here is my analysis of it. There you go.' Very down to business.¹⁵

Alexis' comparison of her appointment with Doctor on Demand to her typical doctor's office highlights a key difference in formality and focus within conversations. While primary care providers are likely to ask about overall health after discussing urgent concerns, telemedicine

¹⁴ Interview with Alexis, a college student who used Doctor on Demand for a virtual visit summer of 2020

¹⁵ Ibid

website doctors focus their attention on the one issue for which the patient scheduled the appointment. They narrow their focus to address the issue at hand and nothing else.

Virtual consultations with traditional providers tend to last longer even if it isn't a yearly wellness visit and are less rushed. This is because primary care physicians typically have well-established relationships with their patients where they see them at least once a year. Primary care requires knowledge of patient lifestyle and home life and eventually practitioners often develop a personal rapport with their patients over time.

Alexis scheduled her visit with Doctor on Demand because her primary care provider did not yet offer telehealth care and they were booked for the rest of the month. She described her appointment with Doctor on Demand as very fast and useful in answering her concerns but she also emphasized that the visit felt significantly different in contrast to her normal physician:

I can give an analogy on how it felt. So, imagine you have a person you're working on a project with, and being in person at the doctors is kind of like working with them at the beginning of the week. Like a week before the project is due, it's like you can talk and blah, blah, blah. like you still work, you know, get stuff done. But you're enjoying their presence and like you're talking with them and just, you know, having a conversation. Being with the telehealth person, like on the app is like the night before the project is due and your partner and you it's like down to business, let's go, we're going to get this done because a lot less stress going on. But that's kind of like the best analogy I can give for like the air of what it felt like talking with them. It's like business, business, business. What do we do? Cause we only got so much time, let's get through this. Whereas, you know, I can sit and have a conversation with a doctor when it's in person. Cause you know, they got a waiting room. They can do whatever. There's no time limit. They're going to get my money anyway.¹⁶

Alexis's experience with Doctor on Demand is reflective of most virtual visits. The "down-to-business" quality of Alexis' experience is not necessarily indicative of poor health care but rather a product of the differing roles that telemedical and traditional providers have. The way the differing providers interact with their patients reflects the purpose of the patient's visit, and the

¹⁶ Interview with Alexis, a college student who used Doctor on Demand for a virtual visit summer of 2020

purpose of each doctor. While it is the primary care provider's role to look over the patients' overall health, it's the telemedicine website provider's role to triage a patient in order to let them know whether an issue is serious enough to go to a clinic and to give them answers quickly on what a certain health issue may mean.

Virtual visits are not wellness check-ups. They are platforms that patients utilize for quick answers in order to bypass the lengthy process of traveling to their doctor, scheduling appointments months in advance, waiting for them to finish with other patients at their office, and most importantly throughout 2020, avoid contact with strangers and potential risk of contracting Covid-19. It offers patients an opportunity to receive immediate answers on health concerns which they are not sure how to deal with and triage patients, directing them to appropriate specialists and prioritizing their time.

The primary disadvantage of telemedicine is the quality of care that physicians are able to provide with a screen between them and their patient. Any physical screenings or examinations for example, require that patients visit the office in-person. Communicating over a video call also introduces the challenge of disrupted social cues which are more challenging to read when individuals are not speaking face to face. Virtual visits additionally must tackle questions of privacy and general comfort of both the provider and the patient in using communication technologies.

Each of my interviewees praised virtual visits as being useful in the amount of time that it saved them. One of my interviewees Emily, a woman who used MD Live told me;

I'm a big fan of it [telemedicine] actually, because it's, it's so much quicker cause I don't have to drive out there. I don't have to wait in a waiting room. I don't even have, usually for me, there's at least a few minutes between like when the nurse checks you in and then you're kind of just sitting, waiting for the doctor to see you. So, what used to be like an hour-long visit for me is now like 10 minutes.¹⁷

¹⁷ Interview with Emily, a 30-year-old who used MDlive

MDLive is a telemedicine site very similar to Doctor on Demand that Emily had access to as a benefit from her employer. Below is their homepage.

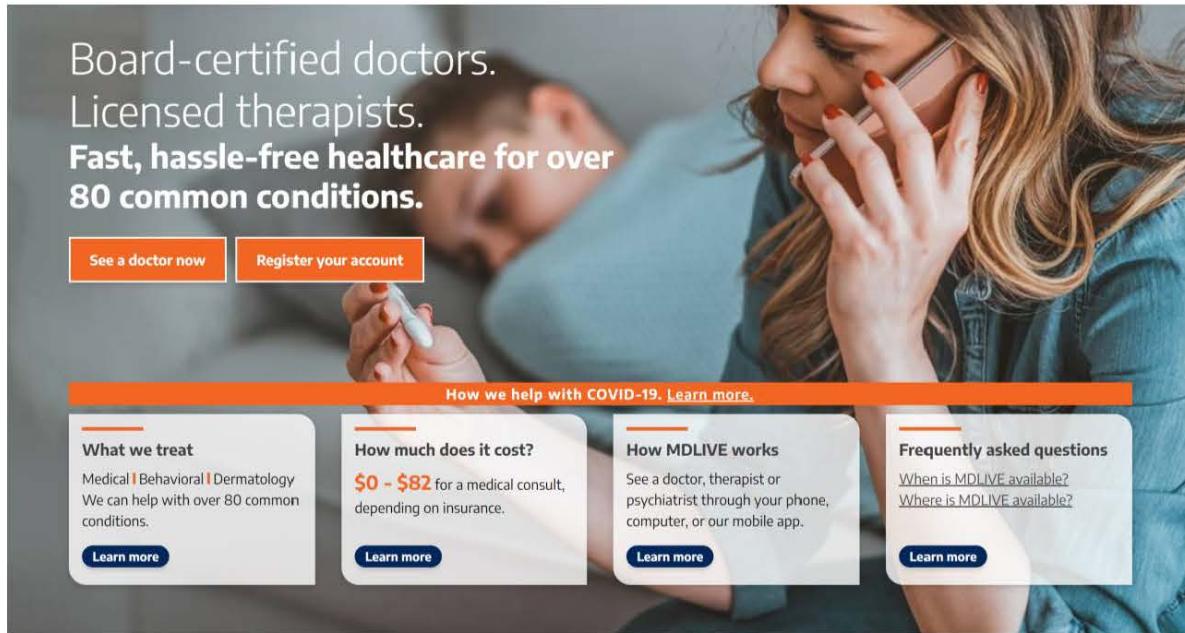


Figure 2.2 Homepage of MDLive website

When a patient's appointment is online, less time is required to schedule as out of their day to account for transportation and waiting for their doctor to finish up with prior patients. With virtual visits, patients can simply log into the video call link that their doctor's office sends them and speak immediately with the provider.

When in-person offices began to offer virtual visits, patients were soon able to take advantage of this new time saving method of care while still being able to appreciate the comfort of using their old provider. One of my interviewees, Katherine, explained to me how useful this set up was for her with an appointment she scheduled with her normal doctor to renew her birth control prescription. She explained that because she has an incredibly busy work schedule, she usually has to schedule her appointment far in advance to work around meeting times and work obligations. Doing the appointment virtually allowed her to easily fit it into her schedule:

I got an appointment quicker than I would have normally gotten an appointment. And in part, I think that's because it was much easier for me to be flexible with my schedule when I didn't have any travel time to factor in. So I just have to section off like a half hour block to zoom with someone. That's much easier for me to plan into my day than it is trouble to doctors sit there and wait, and then come back.¹⁸

Katherine explained that she was able to have the appointment link open on her personal computer and while she was in the “waiting room,” continuing her work on her work laptop. When the doctor was available, she simply turned her head to talk to her doctor and resume her workday soon after.

The benefit of how much time and energy the patient saves by not having to travel and wait for their provider is undeniably a top incentive for patients to use telemedicine sites or virtual visits with their normal provider. It prioritizes that patient’s time rather than solely the provider’s.

Communication Over Video Call

With working, learning, and socializing all happening predominantly virtually as the country is in lockdown, video calling has become “the new normal” and many of us have become very familiar with the general challenges of talking over video calls. Just as for our work meetings, classes, and calls with our friends, zooming with a physician raises the same social obstacles. Doctor- patient conversations over zoom are impacted by the same constraints as virtual meetings for work and school.

A general loss of social cues which we normally rely on such as reading body language and a person’s appearance is limited to what we can see from the shoulder up. We also lose the ability to read physical proximity and touch which may be used for consoling patients or

¹⁸ Interview with Katherine, mid-30s, on her virtual visit with her primary care

expressing sympathy. Even reading facial expressions is impacted depending on the quality of the internet connection, the lighting, and the camera (Epstein 2020). This disruption in reading another person, gauging reactions and interpreting unspoken feelings halts the normal flow of conversation and comfort in discussion. Often, the loss of social cues can be the cause of awkward pauses and misinterpretations of what is expressed in an online interaction.

Because the patient can monitor themselves through their profile in video conferencing and can see what the doctor sees (and vice versa), the patients (and doctors as well) can decide how much of themselves can be seen through the camera and control how they present themselves to the other person. One of my interviewees, Emily, explained that when her work started using video meetings, she felt very aware of what she looked like because she could see her video profile on the screen. “I felt weird that I was just like staring at people and they were staring at me and I always caught myself thinking like, ‘is that a good angle?’ And everything. And now I’m like, whatever, yeah.”¹⁹ The ability to see oneself makes users highly self-aware of their appearance and at times self-conscious.

This high level of control over one’s presentation of self over video calling platforms also provides a potential opportunity however, to combat aspects of doctor-patient interactions that reinstate imbalanced power dynamics between the role of the doctor and that of the patient. Physicians for example may be able to present themselves in a manner that is more approachable for patients. By taking a call in their office rather than in an exam room, patients who are uncomfortable with clinical spaces can speak with a provider with more ease. Or, wearing work clothes rather than a white coat which is a symbolic image often attributed to the authoritative

¹⁹ Interview with Emily, 30 year old working in marketing discussing her experience with using MDLive

figure of “the doctor” (Blumhagen 1979; Moerman 1998), can encourage patients to feel more secure in speaking with the physician.

The appearance of medical symbols such as the doctor’s white coat, their stethoscope, and other tools which exist as representations of the physician’s position of authority and level of medical knowledge impact how the patient interprets the physician (Blumhagen 1979). Altering the visibility of these symbols has the potential for the physician to present themselves in way that patients do not associate with previous doctors with whom they have had negative experiences. These changes may allow for more productive conversation between patients and providers, where patients are more open to sharing relevant information on lifestyle factors that may affect medication, or concerns that patients have with treatment plans. Often patients do not question doctors because of their authoritative role, and these changes may allow for conversations like these to happen more often, prompting providers to share more explanation on their approach to treatment in return and allowing for more in depth discourse to occur overall. Conversely, it could cause the patient to question the capability of the doctor should reading the absence of these symbols be understood as a representation of the doctor’s expertise (or lack thereof).

As more time went by during the pandemic, I noticed that the patients I interviewed started expressing more comfort with talking over video and having virtual appointments. Emily explained in her interview that because video communication became an integral tool for her work every day, using it with her physician was a relatively easy transition for her to make. She said:

I was comfortable. I think some of that, though, is because we've been doing so much of this for work anyway that by the time I had gotten to the point where I had that appointment, it was like a normal part of my day now. I mean, when we first started doing zoom stuff back in March, I think everybody was just like,

we're working at home and no one knows what we're doing and maybe we'll call each other, but we started doing more Zooms maybe by April and May. And if I had had an appointment, then maybe it would have been weird because I know that I felt weird about doing it.²⁰

Emily's experience using telemedicine reveals that the more people use video calls routinely—not just to talk to friends and family members, but also to hold meetings with work colleagues and classes for school—the more this mode of communication is becoming a norm of day-to-day life. As using technologies for remote video communication with others becomes more familiar, the general comfort level of users increases.

Reproductive health and sexual health are often difficult subjects for patients to discuss with healthcare providers. It requires open discussion on the patient's reproductive organs and often their sex life which are normally taboo subjects. Discussion of these topics is very personal and in a virtual context, the kind of layered separation between patient and doctor may be impactful on how comfortable the patient feels talking with the provider.

I originally anticipated to hear more participants express positive responses to having these conversations virtually because in a talking to a screen, the other personally is essentially “virtual”. I expected that some patients would be able to feel more comfortable talking openly with a doctor online because it would feel less “real” and less intimidating since they are talking to a screen, rather than a person physically in-front of them.

I more often instead heard the opposite sentiment, especially when the patient hadn't met the doctor. They felt it was challenging talking to a physician about health concerns over video when they didn't have an established relationship with them. It takes time to become comfortable with a doctor in normal situations face-to face, but because the meeting is also taking place in an untraditional manner, it takes even longer. Michelle, a woman who had a call

²⁰ Interview with Emily, 30 year old working in marketing discussing her experience with using MDLive

scheduled with her OBGYN, explained that her existing relationship with her doctor was the reason for why it felt more comfortable,

I think the very first time I was a little bit unsure of what to expect. I think especially ‘cause I had a relationship with this doctor already felt pretty comfortable with the transition...it felt really weird at first seeing my doctor on my phone instead of in person. But I think it definitely helped that I already knew her and I really liked her as a doctor. I think that she has really good communication skills, which you don't always have in doctors. I think part of it is like, you know, when I'm waiting for the telemedicine appointment, I kind of know what the person's going to look like and what our conversation is going to be like. Whereas if it was with a doctor I haven't met before, I don't even know what I should expect them to look like or what they're going to talk to me about. So I think, yeah, I think for me it would be much harder to have an initial telemedicine appointment with someone I hadn't met before.²¹

When the patient has a pre-existing relationship with the doctor, this can help them feel more comfortable in talking over video. Michelle had a routine check-up scheduled with her gynecologist towards the beginning of quarantine, so the office was trying to eliminate face-to-face contact as much as possible. The consultation portion, where she and her doctor were just talking to each other, would have occurred over videocall the day before she came, but she forgot to respond. The office decided to have her do that portion of the visit over the phone at the office with her doctor and her in separate rooms.

So, I was working, and I had a voicemail from my doctor saying like, ‘Hey Michelle, it's Dr..... I'm calling ‘cause you have an appointment tomorrow and I wanted to talk to you by FaceTime before the appointment.’ Of course, I didn't see that message till 10:00 PM. So, we didn't Facetime each other. So, I get there and I went in and you know, the nurse checked my blood pressure and all that other stuff. And then she was like, ‘since you didn't get to FaceTime with Dr..... last night, she's going to call you from her office.’ So, then the nurse dialed the phone in that room, like the regular, like old school office phone, just to call the room next door!²²

²¹ Interview with Michelle on her virtual visit with her OBGYN

²² “ ”

Michelle explained that she felt the measure itself was awkward, but because she had a good rapport with her doctor and had been seeing her for years, she felt comfortable doing that portion of the visit over the phone.

This response of patients placing the same feelings of discussing personal topics with a physician virtually captures the fact that patients do indeed conceptualize the interaction as being just as real. What makes this interaction different from the anonymous contact experienced in telecontraception sites? It is my understanding that the difference arises as a product of the many steps that are taken to legitimize the authenticity of health care providers on telemedicine sites such as MDlive and TelaDoc, etc. The patients first of all, know the doctor's name and can find listed on the site where they are licensed, where they went to medical school, residency, etc. and, the interaction happens all over video call.

Interactions over video call allows for 'live' communication where the patient interacts one on one with a provider. It is very different from the care that the patients discussed in chapter two received where they never put faces to the names of whatever providers are responding to them. And, they only interact with providers in a matter of a few sentences each. For telecontraception sites, the establishment of patient trust that is necessary for virtual visits is less of a requirement for telecontraception sites because these companies are rarely giving medical advice but rather the prescription and tools for patients to care for themselves.

Moving the patient-provider interaction to take place virtually can also impact certain qualities of the physician-patient interaction that are essential for the visit to be a therapeutic process. Situations where empathy and sensitivity are necessary tools for providers to utilize with their patients often also require the physical presence of the provider or are challenging to convey across a screen. Sharing sensitive news to a patient over a video or voice call, for

example, is not usually appropriate and out of respect for the patient, is often better to be done face to face.

Some tools physicians use in order to build trust with their patients include attentiveness and clear communication that proves their prioritization of their patient's health. Carlo Botrugno argues that the physical presence of doctors – their sensorial abilities, and the intimacy and immediacy characterizing physical encounters – must be seen as still fundamental for patients making sense about *technical details*, such as symptoms and medical prescriptions, which in turn is fundamental for establishing an effective therapeutic alliance" (Botrugno 2019, 15). When the doctor is physically with the patient, more communication takes place. The patient asks more questions, and the doctor explains health conditions and treatment plans in more detail. There is simply more dialogue.

Botrugno notes "the way in which doctors and patients behave during a consultation may influence a patient's subsequent state of health. More control by patients, more expression of emotion, and more information sought and provided have all been shown to be associated with better health on follow-up" (Botrugno 2019, 3). He notes that because this quality is lost with telemedical visits, telemedicine can lead to making the patient's visit less successful and their compliance to treatment less optimal due to the lack of intimacy and personalization in the interaction.

Facial expression, tone and attentiveness are dimensions of communication that can be conveyed over video calls. Physical touch and proximity, however, cannot. If a provider depends on body language and touch to most thoroughly convey empathy and compassionate concern for their patient, then virtual visits will not feel as helpful. This fact was very clear with

a nurse I talked to who worked in palliative and hospice care. She explained that with talking over the phone and with video calls, it's very challenging to express sympathy;

For some things I think it's fine, for some things I think you still need to be in front of that person you know....like we did telemedicine a little bit for the first few months of COVID-19 and I think it's really hard to have some of those conversations over the phone about you know the trajectory of decline or if a family member is really going down fast and you have to tell someone over the phone, you- you lose that human touch.²³

By human touch, she explained that this was a quality of conversation with both a literal and figurative meaning. Empathy is most clearly evoked through in-person conversation because of the comfort that one individual's physical presence can provide to another (Pudlinski 2005). Body language such as openly facing the other person in conversation, leaning in rather than away, etc. helps to express sympathy and empathy.

The challenge of conveying emotionally stressful health information was not a issue for most of the patients I interviewed using telemedicine for reproductive health reasons, as none of my interviewees had had to receive that sort of news. Caroline noted that in its use in the future, the necessity of using telemedicine so much in this year has taught providers that post-screening consultations that require the discussion of emotionally sensitive topics should be kept in person. While the meeting may not require hands-on touch or further examination and only conversation, it is impossible to capture the same level of compassion and empathy that having conversations face-to-face has and as such it should be the ethical responsibility of providers to consider this.

Privacy Concerns

Patient interviewees explained two types of privacy issues using telemedicine. The first is an issue of privacy in the patient's physical location when making the video call or phone call

²³ Interview with Caroline, Nurse working in palliative care and hospice

with the provider and the second is a concern with putting health information and insurance on telemedicine websites and whether the sites that the company uses are secure. While patients enjoy not having to travel to visit their doctor, they must also now determine an appropriate space to talk with their doctor. While the doctor faces no challenges video calling in their clinic's office or in a private home office, the patient has to find a private spot as well. With virtual visits, the patient is challenged to find a private space away from family members or those they are living with, or in a location outside their home. Normal conversation taking place in doctor's offices has the benefit of offering a private setting for the patient to feel more comfortable discussing sensitive and personal information

This was a concern for several of my participants who were college students living at their parents' home for the semester. For instance, one student explained,

Now I'm at home and we don't live in like a super small house, but like my brother's in the room right next door and the house isn't super soundproof. So, whenever anyone's loud, you can kind of hear in different parts of the house. So, I was definitely, you know, kind of nervous about not wanting my family to overhear what I was talking about.²⁴

Living in a home with parents and siblings made it challenging to have private conversations with their doctor without the discomfort of family members overhearing the conversation.

Patients also worry about the privacy of using video communication platforms and the security of webpages that telemedicine companies use. Patients might use their health insurance to cover the cost of an appointment and as such are putting important information into their system. Polly explained this was also a concern for her and that,

Before I ended up setting it up, I did some research of just like making sure that it was, um, going to be private and stuff. Um, 'cause I didn't want to do give my insurance information and everything to some random thing on the internet. But I

²⁴ Interview with Polly, 18 year old college student, who used TelaDoc

read some reviews and poked around a little bit and it seemed pretty legit. So once I had decided that it seemed not sketchy then from there, it was really easy.²⁵

As discussed earlier, telemedicine sites were in-fact required to follow strict guidelines with their video platforms in order to comply with HIPPA policies, though this was significantly relaxed in the context of the coronavirus pandemic in order to allow for more widespread telehealth use.

Patients are thus concerned about the security of the websites' information storage system in having insurance information on file as well as security of the call itself.

Overlooking Things

The most challenging characteristic of virtual communication not only manifests itself in a loss of social cues, but for doctors, the physical loss of senses and access to touch, probe, examine, and administer tests on patients' bodies. In many situations, practitioners rely on these kinds of direct interactions with patients' bodies for properly making diagnoses. For this reason, on many of the telehealth websites I encountered, physicians are not permitted to make a final diagnosis because there exists the possibility that they overlooked or missed details.

This was the case for Zoe who had used Doctor on Demand and found it not nearly as helpful as visiting a doctor in person due to the physical constraints of the consultation. When describing her telehealth visit, Zoe told me that,

... it was limiting in the physical sense. There are some things you just can't do over a screen. Basically, he was like, 'okay, it's either X, Y, or Z'. And he couldn't necessarily give me a... what was it... It's not like a doctor's recommendation or like a doctor's note or something like that...they couldn't officially do that. So I still have to go in to see an actual, dermatologist to get it checked out physically to ensure this is what it is, and this is what we're going to do to fix that. So, it was still very limiting.²⁶

²⁵ Interview with Polly, 18 year old college student, used TelaDoc

²⁶ Interview with Zoe, 45 year old, used Doctor on Demand

The doctor asked that Zoe described with plenty of detail what her issue looked like and felt like and she was able to give her suggestions on where to go/what type of specialists to see, as well as his thoughts on what the problem might be. The challenge is that the doctor was not able to provide a completely accurate diagnosis and also did not feel like he was in the proper position to do so. In some instances, this limitation is enforced by company policy and in other cases is the result of state policy because of concerns with the doctor being liable for malpractice.

A failure to properly examine and diagnose the source of a patient's symptoms created a huge challenge for another participant I interviewed, Gabrielle, who scheduled a virtual visit with her gynecologist this past May. Gabrielle was concerned something was wrong with her IUD because she was experiencing abnormal abdominal pain. Because she had a routine appointment scheduled for the following month, Gabrielle's gynecologist advised her to wait to get the problem checked out at that time because she surmised it wasn't too serious. But, as Gabrielle explained,

... I kind of freaked out about it and went down like a web MD rabbit hole... I called the doctor and they were like, are you in labor? And I'm like, no. And they're like, all right, then we have to do it via telemedicine because this, you know, this is May. It was kind of really at the height of the wave [Covid] and everything. And like, the answer that I got was like, all right, take some Advil. Like, okay. But like, I really think something's wrong!²⁷

Gabrielle felt that her doctor brushed her off and as it turns out, when she went to her gynecologist's office for an in-person appointment the following month, they discovered that the IUD was embedded in her cervix. If her appointment in May had been in-person, the doctor would have gone ahead and done an ultrasound then and there and discovered the issue earlier.

Gabrielle explained,

So I ended up having to get like an ultrasound in order to figure out what was wrong. That was like July, like first week of July. And so I went in and got the

²⁷ Interview with Gabrielle on her virtual visit with her gynecologist

ultrasound, um, and it turns out my IUD had embedded itself in my cervix. And they were like, ‘Oh yeah, I guess that’s why you were experiencing pain.’ And I’m like, no, shit!²⁸

Gabrielle’s experience is a prime example of the physical limitations of telemedicine appointments, and even their potential dangers. In this case, it is clear that Gabrielle’s physician should have heeded her concern and brought her in for further examination and having her appointment take place via telemedicine clearly limited the efficiency of care. It is apparent that certain aspects of patients’ conditions can be overlooked, and information that might have led to a different diagnosis can be missed.

In order to redirect patients to proper treatment facilities, telemedicine sites must make it clear that they are only able to treat a handful of medical issues. Doctor on Demand provides on their website a list of certain health concerns that need to be seen in-person to be properly treated which is shown in the figure below, mostly consisting of direct injuries and symptoms of conditions requiring immediate treatment/medication by a provider.

The screenshot shows the Doctor on Demand homepage with a navigation bar at the top. Below the navigation, there is a section titled "What We Don't Treat" with a list of medical conditions. At the bottom of this section, there is a note about controlled substances and two footnotes providing additional context.

What We Don't Treat

While our providers are able to treat most common issues, there are conditions that we don't treat. Please see an in-person doctor or hospital if you experience any of the following:

+ Traumatic brain or spinal cord injury*	+ Loss of consciousness
+ Chest pain and/or numbness	+ Broken bones
+ Vomiting or coughing blood	+ Severe burns
+ Lacerations	+ Ear infections**

Our providers are unable to write prescriptions for controlled substances such as codeine or oxycodone. Please see a doctor in person if you require medication classified as a controlled substance.

*Please note, this limitation is for the immediate period following a spinal cord or traumatic brain injury, which may need in person emergency or trauma medical services. We are able to treat people who have a history of a traumatic brain or spinal cord injury that have non-emergent medical needs.

**People who have a digital otoscope that allows the healthcare provider to see in the ear remotely can be evaluated during a telemedicine visit for ear infections.

²⁸ Interview with Gabrielle on her virtual visit with her gynecologist

Figure 2.3 Doctor on Demand's list of untreatable conditions

With telehealth visits, the doctor may be able to tell the patient what they think the issue is. But in order for them to be accurately diagnosed, the patient will probably need to visit another provider in person. Meeting with a provider virtually acts as a manner of triaging patients to direct where they need to go and give the patient a sense of how severe their condition is. Virtual visits do not replace the role of in-person health care providers but instead can offer an immediate response which could be consoling for the patient and seems to be the main draw in using telehealth consultations with web-based groups.

Patient-physician roles

Virtual visits offer opportunities for patients to talk with a doctor and assess whether an issue is serious enough to warrant further in-person care. Patients can decide whether a concern is worth visiting a doctor for, worth the travel time and the scheduling of an appointment that may not be available for several months. Without the ability to provide a basic physical examination, physicians can no longer rely as heavily on touch and sight to diagnose patient issues. Instead, they must rely more on the patient to take over that role. Through virtual visits, patients are tasked with making observations of their bodies that would normally be noted by a medical professional.

Deborah Lupton explains the impact that the loss of touch has on patient care. She emphasizes the challenge providers experience when they lose full capability of their senses as they typically rely on to look at their patients' body parts, "touch the patients' bodies (to feel their pulse, check for mobility or swellings, ascertain where they are feeling pain and so on), listen to their internal bodily sounds or the way they are speaking or breathing and use smell to

discern states of health and illness (to detect signs of infection, the presence of body fluids such as bile or dermatological or metabolic conditions, for example)” (Lupton 2017, 5). All of these senses are either lost all together or greatly diminished with telemedicine, and as such, providers are forced to find new ways to collect that information by asking patients directed questions.

Lupton argues that because of this new necessity, telemedicine changes “both the nature of the healthcare experience, as well as the relationships between healthcare professionals and their practice. It encourages patients to take on more responsibility for their own health care, conforming to the ‘digitally engaged patient’ ideal” (Lupton 2017, 7). With telemedical care, providers depend on patients to describe their symptoms more visually than they would if they were in person and could examine the body so that they can more accurately interpret its medical significance.

Providers can also “conduct” basic monitoring that would normally be performed in-office with the use of personal e-health technologies, such as heart rate monitors, symptom trackers, etc. One nurse I interviewed said that when her patients have a personal blood pressure monitor at home, she can simply watch them take a reading over video call and jot down their data into her charts. Nelly Oudshoorn labels this use of e-health technologies as “telemonitoring” of patients (Oudshoorn 2008). She writes that in integrating e-health technologies into primary care, patients are expected to “inspect their own bodies and transmit the gathered data back to healthcare professionals” (Oudshoorn 2008, 2). Oudshoorn proposes that this new responsibility of the patient in using telemonitoring, changes the agency of its users, as patients are now expected to do work that is traditionally performed by healthcare professionals (Oudshoorn 2008).

This requirement of patients examining their body is a huge shift from traditional patient consultations where the doctor physically examines the patient and gives their opinion. It begs the discussion of how the doctor interprets the body and how the patient understands the body, and how those conceptualizations must meet in the middle for physicians to base medical prognosis on what the patient is able to describe.

When examining a body, physicians employ a perspective known as the “medical gaze” in order to interpret what body systems are functioning improperly and require aid. The medical gaze, as coined by Michel Foucault, criticizes the manner in which physicians observe a patient’s body as that of a material thing which is separate from the individual’s self as a person (Foucault 1963). The theory of the medical gaze is that physicians conceptualize the body as a biological thing that is functioning incorrectly due to illness. Foucault writes,

Paradoxically, in relation to that which he is suffering from, the patient is only an external fact; the medical reading must take him into account only to place him in parentheses. Of course, the doctor must know ‘the internal structure of our bodies’; but only in order to subtract it, and to free to the doctor’s gaze ‘the nature and combination of symptoms, crises, and other circumstances that accompany diseases.’ It is not the pathological that functions, in relation to life, as a counter-nature, but the patient in relation to the disease itself (Foucault 1963, 7).

Foucault captures in this quote a typical biomedical perspective, that health is solely based on scientifically quantifiable processes and the most accurate way to determine health is determined through what can be seen and that which is quantifiable.

Foucault’s notion of the medical gaze considers sight to be an integral tool for physicians in both providing care and as a source for legitimizing medical authority based on scientific support. Foucault explains that sight is considered by the scientific community to be one of the least biased forms of knowledge production (Foucault 1963). The eye, Foucault describes, is a source of clarity; “it has the power to bring a truth to light that it receives only to the extent that

it has brought it to light; as it opens, the eye first opens the truth" (Foucault 1963, xiv). In other words, the medical gaze reduces illness to visible, tangible, and measurable symptoms to make treatment of patients uniform and therefore "accurate."

The medical gaze or "the observing gaze," according to Foucault "refrains from intervening: it is silent and gestureless. Observation leaves things as they are; there is nothing hidden to it in what is given." (Foucault 1963, 131). It is considered by the medical community to be the least subjective manner of transferring information and as such, a doctor visually examining a patient, and interpreting what they see based on its medical significance would be the least subjective mode of diagnosis.

This is opposite to what Foucault describes as the previous mode of treating patients which was based on the descriptions and complaints of the patient. Foucault based his work on research done in a teaching hospital and comparison to historical analysis of previous medical discourse. He describes a change in dialogue between doctors and patients in the nineteenth century where doctors would previously begin treatment of patients asking "'What is the matter with you?', with which the eighteenth-century dialogue between doctor and patient began ...which was replaced by another question: 'Where does it hurt?' , in which we recognize the operation of the clinic and the principle of its entire discourse." (Foucault 1963, xxi)

The treatment of a patient based solely on the patient's explanation of pain would be illegitimate if their description of symptoms could not be directly observed and quantified. But that is exactly what telemedicine, specifically virtual visits requires the physician to do. Arushi Sinha brings to discussion that new telehealth technologies perpetuate this reverence of sight and data as the most accurate mode of determining sickness in patients. Her argument is that new technologies like X-rays and MRIs perpetuate the belief in visual imagery being the most

efficient mode of communication and regarded as the sense that “is least subject to interpretation or ambiguity in meaning.” (Sinha 2000, 292). She also explains that biomedicine “compartmentalizes ailments as they are visually sensible with respect to specific body parts, and therefore often does not treat the entire patient” (Sinha 2000, 292).

While imaging technologies clearly continue the physician’s use of the medical gaze, telecommunications with patients I argue cannot rely on this model of treatment to effectively aid the patient. This increased dependence on patient involvement, describing their condition, requires physicians to rely more heavily on patient accounts. More communication is required between the patient and provider to problem solve and better identify possible causes to the patient’s pain due to the physical limitations of the interaction. The technological advancement of telemedicine both reasserts this defect of biomedicine’s reliance on sight and challenges the existing methods of diagnosis.

The primary disadvantage of telemedicine, where its efficacy is criticized most, is the fact that screenings and exams cannot be conducted, processes that, as Sinha explains, are modern developments of the medical gaze. This captures the fact that healthcare still very much operates with the same values that Foucault observed in the teaching hospital: that visually examining the patient is the ideal manner of determining their illness. The physician’s dependence on sight limits what can be treated virtually and in order for treatment to be effective through virtual consultations, the physician must be creative in their method of information collection.

Going virtual makes it clear how much doctors rely on the medical gaze. With telemedicine, physicians must instead depend on patients to make observations of their body. If Gabrielle’s doctor had been better trained to communicate with Gabrielle, asking her more questions about her symptoms and identifying the worry and thus the gravity of her situation,

then perhaps Gabrielle wouldn't have had to wait so long to be treated. It would have been necessary to use imaging to identify exactly that her IUD had been so misplaced, but the doctor should have been trained well enough in communication with her patients to comprehend that Gabrielle was in pain and, considering her medical history of having been recently had an IUD inserted, that the possibility of this kind of problem occurring was probable. Instead, the doctor delayed Gabrielle's treatment, perceiving it as a complaint that didn't require urgent attention. She was scheduled to receive screenings in line with what was convenient for the doctor's office rather than the doctor making a greater effort to understand the source of her pain over their video call or asking further questions that might help identify the problem.

David Messelbrook's interpretation of Foucault's medical gaze is that through it, doctors modify their patient's stories, "fitting it into a biomedical paradigm, filtering out non-biomedical material" (Messelbrook 2013, 312). Messelbrook describes using the gaze as "an act of selecting what we [physicians] consider to be the relevant elements of the total data stream available to our senses. Doctors tend to select out the biomedical bits of the patients' problems and ignore the rest because it suits us best that way" (Messelbrook 2013, 312). This is precisely what Gabrielle's doctor had done.

Telemedicine reveals our overdependence on the medical gaze and challenges physicians to be more resourceful with data collection, involving the patient to take on more responsibility in the medical managing of their body. Sinha poses the question of whether telemedicine could democratize the medical gaze if both the patient and physician view each other through a screen (Sinha 2000). I think however that while the gaze may be democratized, it is not because the patient can monitor the doctor as much as the doctor can monitor the patient, but rather it is through the necessity of the patient to turn the medical gaze onto themselves. The

democratization of medical information through the internet and through health tracking technologies that a patient can use to monitor themselves also allows the patient to begin to observe their body as a doctor would.

Foucault argues that the medical gaze is a learned perspective which he observed is passed down from experienced physicians to medical students within the teaching hospital he analyzed. Foucault argues that because the teaching hospital is a field of power with a hierarchical structure of authority, the objectification and analysis of a patient's body as being a separate material thing is normalized. He explains that through the establishment of teaching hospitals taking over apprentice type mentorships, the medical gaze became organized in a new way, "it was no longer the gaze of any observer, but that of a doctor supported and justified by an institution, that of a doctor endowed with the power of decision and intervention" (Foucault 1963, 109)

The democratization of the medical gaze and medical information challenges this field of power allowing patients participate more in medical discourse and create a more balanced power dynamic and allow for more patient-centered care. The use of medical information websites and e-health technologies are a huge proponent that allows for patients to have a broader command of medical knowledge and participate further in medical decision making with their provider. This will be discussed in my final focus on e-health technologies.

Chapter 3– E-health technologies; Apps, Devices and Online resources

This next portion will focus on health tracking technologies. This emerging category of health devices falls into the general category of e-health. In the field of reproductive and sexual health, phone applications that allow users to track menstruation, set reminders to take contraception pills, and track prenatal health and fertility, all have been used increasingly over the last decade with the further development of smart phones and tablets. Even more recently, fertility tracking devices allow users to track fertility hormone levels and temperature at home for more accurate family planning. And phone applications and dopplar technologies provide women with resources to monitor their pregnancy and learn about their child's physical development throughout different stages in their pregnancy.

As Tanja Ahlin defines in her article “Anthropology of E/M-health and Telemedicine: Time to pay attention,” personal health technologies are “near-body devices or applications designed for use by a single individual, principally outside healthcare facilities. They enable users to monitor physiological processes or body activity, are frequently communication-enabled and sometimes also intervene therapeutically.” (Ahlin 2016, 2). This is the definition I used in categorizing devices that my interviewees described.

Popular examples of personal health tracking devices include smart watches and fitness watches that track a variety of health data. Garmin, Fitbit, and Apple are three common brands that sell health tracking “smart watches” which are used predominantly to track fitness. The watches produced by these companies track physical activities such as walking, running and swimming, tracking calorie use and movement throughout the day. More recent models also track heart rate and blood oxygen levels. The data collected then syncs to an app on the user’s

cell phone so that they can view it and compare the data to what was collected the day, month, or even year before (Fitbit 2020; Apple 2020; Garmin 2020).

All three of these companies have recently in the last year integrated a women's health feature on their apps for users. Garmin, Fitbit, and Apple's integration of Women's health tracking builds on pre-existing phone applications that allowed users to track menstrual health. Menstrual health apps, including common ones such as Clue, Dot Fertility, and Natural Cycles, allow users to input when they are on their period and the app will start to predict the user's cycle (Caddy 2019). The user can edit the data so that they can effectively track their cycle and ovulation know and exactly when they are late or when they are about to start menstruation. This information is useful for women trying to avoid pregnancy just as it is for women tracking their fertility in an effort to conceive.

With menstrual health tracking apps, users can also keep track of "physical symptoms" such as acne, bloating, cramps, cravings and fatigue as well as their mood (Caddy 2019). They can then compare that data with their other health information if the app covers broad data such as Fitbit, Garmin and Apple and see how stress levels, physical activity and other health data is impacted by their cycle and vice versa.

One college student I interviewed, Maddison, explained to me how much she appreciated the symptom and mood tracking component to the women's health section on her Garmin watch because it gave her time to check in with herself;

"It's kind of comforting in a way 'cause I know what I'm feeling is normal. It's also kind of like a check-in. I'll actually sit down and be like, so what am I feeling? You know? But it can be useful because sometimes I'll go, 'wow, I've been really angry'. And [the app] is just like acknowledging it."²⁹

²⁹ Interview with Maddison, 19-year-old college student

Maddison also appreciated the ability to track her cycle simply because it normalized what she considered to be a very irregular cycle. She explained that it eased her concern about the long stretches of time between periods that for most women are much shorter.

“I think it made me less worried because I’m so irregular that I was like ‘Agh this could be bad!’ But then the fact that it [the app] can predict it was like, okay, maybe it’s not that strange...And then like comparing it to what could be considered “regular” relieved some anxiety.”³⁰

Many menstrual health tracking apps also provide medical information and links to health webpages with information about different women’s health facts and explaining why users experience different symptoms. One college student I interviewed, Tory, who uses Flo to track her menstrual health, described the health information feature as follows;

I kind of like, chat with a bot. It says for example that you logged this period as, um, lasting 30 days. This is what happens during the first, like one to seven days, seven to 14. Um, cramps usually happen because like the uterus is like contracting or whatever. And then it says um, acne happens because of hormones. So, like, it just kind of gives you an explanation of why you’re experiencing certain things. And I guess it’s kind of reassuring sometimes. Um, cause like there’s a, there’s a reason behind everything that I’m feeling. Um, and I don’t really have to like Google it or something.³¹

Flo also provides statistical data for users to compare their symptoms with those experienced by others. For example, Tory showed me on her Flo app that if she were to log in “backache” as a symptom she was feeling, the app in response wrote “Let’s look for possible causes together.” And pulled up the biomedical explanation for why users experience back pain during their period and the screen then pulled up statistics showing that “around 30%, to 32% of Flo users logged backache during their cycle.”

³⁰ *ibid.*

³¹ Interview with Tory, 21-year-old College student who uses Flo

Medical explanation features make understanding your body's personal health more accessible for non-medically trained individuals. Users can now know a highly accurate estimation of when they will get their next period and the guesstimated symptoms they might feel. They also can learn exactly why they are experiencing those symptoms and be reassured that many other people experience the same symptoms on theirs.

The female health tracking feature is useful not only for users tracking their menstrual cycle to prevent unwanted pregnancy, but also for women who recently switched contraceptives to track how it affects their cycle and the symptoms that they usually experience with it. Integrating this ability into health watches allows users to see how other health factors that the watch and app tracks such as stress, weight gain or loss, and sleep might affect their period.

Fertility/Ovulation Devices

More specialized cycle tracking applications also allow women to both prevent pregnancy and more effectively conceive using further detailed tracking methods than the menstrual health apps described above. Natural Cycles, for example, markets itself as "the first and only birth control app" as it is the only FDA approved and CE³² marked application that carefully calculates fertility throughout the month based off of several physical symptoms/ characteristics that the user self-reports. It claims to be 93% effective. This past year it became the first certified form of "digital contraception" in Europe (Lacy 2020).

The app uses an algorithm based off of basal body temperature (lowest body temperature) to predict the user's fertility each day.

³² CE marking indicates that a product conforms with the health, safety, and environmental protection standards for products sold within the European Economic Area

“If you’re trying to conceive, it gives you the go-ahead; if you’re preventing pregnancy, it gives you a big, fat warning sign. While it markets itself as a high-tech consumer health product, this ‘digital contraception’ actually follows the oldest method in the books. It’s the rhythm method, updated for the smartphone generation.” (Lacy 2020).

Natural Cycles uses similar symptom tracking as the smart watches discussed above to pattern the user’s cycle and pairs that information with temperature, which users log each morning. Because the body’s basal body temperature typically rises by 0.5 to 1 degree after ovulation, the app can track the user’s temperature throughout the month and provide an even further accurate estimation of the user’s fertile window (Naturalcycles.com 2020).

Basal body temperature can be read when the body is fully at rest, so users are instructed to take their temperature every morning before getting out of bed. Another way to more accurately track basal body temperature is to use a device like Tempdrop. Tempdrop is an armband that works like a wearable thermometer. The wristband thermometer “derives a core nightly sleeping body temperature for the purposes of charting your cycle to achieve pregnancy, contraception, or fertility health tracking.” (Tempdrop 2020). This is another example of smart devices that women are using to help accurately track fertility in pregnancy planning and it calculates an even more accurate basal body temperature while you sleep using a combination of sensors and algorithms.

Another method for tracking fertility is through hormone tracking. Mira Fertility, for example, is a company that sells at-home “lab-quality” hormone tracking systems for women to track their LH (Luteinizing Hormone) and Estrogen hormone levels. These systems include disposable wands, which the user would use similar to a pregnancy test. The wands are inserted into an analyzer that measures the user’s exact hormone levels. The device reads off the data on a small screen but also syncs to an application on the user’s cell phone which charts out their

hormone levels over time. The device is able to then collect the user's baseline hormone levels throughout their cycle and depict how hormone level increases correlate to ovulation.

Mira Fertility's website boasts over 99% accuracy and is "OBGYN recommended and FDA approved." Mira's system gives the user a complete fertile window of 6 days through tracking both LH and estrogen hormone levels as estrogen increases just prior to ovulation and then a rise of LH levels trigger ovulation. By tracking both of these hormones, the application's algorithm can predict a more exact window. Monitoring estrogen levels also can help uncover infertility causes and monitor infertility treatments. The downside is that each system costs about \$200, making it possibly unaffordable for many potential users.

Pregnancy Technology

So far I have discussed different applications and devices for menstrual health and fertility tracking. The last health tracking technology I will touch on allows mothers to track pregnancies and access prenatal health education. For one of the women I interviewed, Elena, the entirety of her first pregnancy was in the midst of the COVID-19 pandemic and several of her checkups were scheduled over video call. Elena explained that the doctor would ask how she was feeling and check in with her, but she was very disappointed with having to have so many of her mid-term appointments online. She explained that because her doctor's office wanted her to do the check-up online, she was not able to get sonograms and hear her baby's heartbeat. This was an important part of pregnancy for her that she missed out on. She explained that it made her feel less connected not having that visual on her child and being able to see what they look like.

Elena explained that theoretically she could have bought an at-home fetal doppler which is basically a baby heart monitor that you can use yourself. She explained that she eventually

chose not to buy one because they are challenging to use and might have in reality just caused more anxiety. "I never did [buy a doppler] though because people told me actually not to. Because sometimes you can freak yourself out if you can't find a heartbeat right away, because it's hard, I think. Um, yeah, so I'd rather just not freak out if I can't find it."³³

To feel more in-tune with her child's development, Elena used a phone application called Ovia Health which gave her valuable information on how the baby was growing and useful education tools for diet and lifestyle habits during her pregnancy. She explained,

... I used [Ovia Health] first before I got pregnant. It has like a tracker for periods and stuff too. Um, and then when I was pregnant, they would tell you like how many weeks the baby is, and like the size of the baby, and like what the baby should feel like that and like how things are kind of developing. Um, but yeah, I did like that app because it showed you like every single week like a new, I guess, comparable like fruit and stuff and things like that. [fruit comparable in size to the developing fetus] And it kind of tells you what to expect. Um, and also on the app. It tells you like to eat certain things and there's like a little food lookup thing, which I actually used a lot to make sure I was eating correctly.³⁴

Elena was excited to see her baby's development but because her doctor had her do the check ins virtually to cut down on social contact, she was not able to experience the excitement that those appointments usually bring. This application allowed her to become more aware of what was going on throughout her body and her child's as her pregnancy developed and furthered her knowledge of how to take care of her body's needs at the time.

She explained that because this was her first pregnancy, Ovia Health was incredibly useful because she didn't have previous experience to compare how she was feeling and having easily accessible information through her phone made her feel less worried about not visiting with her doctor as much.

³³ Interview with Elena on her first pregnancy which coincided with the pandemic and on using OviaHealth

³⁴ Ibid

It's like, you want to hear the heartbeat and you know, you just want to like know everything bad and um, it makes you feel better when you make the appointment that the doctor reassures you of everything. So, um, it was hard to kind of get that over the phone and video. They're basically asking you how you feel. And it's hard. It's like, I guess I feel normal. I don't know, I've never been pregnant before, so I guess everything is alright. I don't know, like you really have nothing to compare it to.³⁵

Elena's experience with her doctor visits during her pregnancy were disappointing because she missed out on several of the ritualistic appointments and screenings that mothers typically go through during pregnancy. And with this being her first pregnancy, it felt uncomfortable for her to not go through those same steps as everyone else.

In this case, telemedicine could only do so much for Elena by giving her conversation time to check in with her doctor, but it was far less than usual and as such she was forced to find further health support. The challenges Elena faced with her pregnancy was unique to the Covid-19 crisis and as such the issue will hopefully not exist in the future. While conversations can happen now virtually, we do not yet have the technology for accurate sonograms and screenings from a distance.

Health tracking devices allow patients to become more involved in monitoring their health. They can take on roles that previously were only able to be performed by health care providers. This involvement creates a sense of control and empowerment for the patient as they gain knowledge of their body. Health tracking technologies allow patients to associate their body's health with numbers and patterns that have assigned ideas of being "healthy" or "normal".

Health tracking technologies provide patients both data on their own body as well as information on how to interpret that data, and access to further medical education resources. Increased access to medical knowledge via the internet and promoted by new health devices

³⁵ *Ibid*

allows patients to participate more in discussions with their health care providers on the state of their body and to feel more informed when making medical decisions. As Deborah Lupton has observed, “the patient or ‘lay person’ becomes a participant who is actively involved in self-care: at the center of action-taking in relation to health and healthcare.” (Lupton 2013).

The widespread use of e-health technologies creates a mass impact on how patients conceptualize their body and their health. Tracking and monitoring one’s body in ways which previously only medically educated individuals could, provides a sense of control and empowerment over the patient’s health. However, it does so while instilling in them the belief of biomedical ideals of the human body.

E-health technology users form a perception of what “healthy” is, what being “normal” is, based on what the apps and information sites they utilize describe. These systems are representative of biomedical models of the body. E-health technologies further biomedical ideas of health being quantifiable to the molecular level. It molds the user’s perception of health to believe the boundaries that it lays out as being normal, under the guise that by tracking health data, the user gains control over their health.

Defining reproductive health based on the appearance of specific symptoms, hormone levels and basal body temperature also propagates the idea that this degree of digitizing health is necessary to be healthy. Not all bodies fit the criteria laid out on these sites. Users are made to feel guilty if they are not taking action to track and monitor their reproductive health. Not only does it make reproductive health tracking widespread and available, it spreads the idea that this is something we all should be doing to make sure we are healthy.

I saw this sentiment reflected in multiple interviewees who used health tracking apps but expressed guilt that they didn’t use more of its tracking features or monitor their menstrual health

as closely as others do. Reproductive health tracking apps, for example, often have both a free version that provides the user with basic period tracking and a premium version that has more features and available medical information. The “premium” version is only available to those who purchase it. Of a total of 16 application users I interviewed, only one had paid for the “premium” version of the app they used. Several users expressed guilt for not paying for the more advanced version of their app and considered themselves to be less involved in monitoring their health. Cayla, a college student who tracks her menstrual health using Apple’s health app, for example, told me in her interview;

Honestly, I really should be more proactive, like actively figuring things out about my body, but I’m also really lazy. The only reason I keep track is because once upon a time, a long time ago, my mom was like, are you writing these things down? [period tracking] And I’m like, no, mom, I’m not. She’s like, you should. I’m like, okay, listen to your mom. So, um, I think this is kind of like the easiest way to do it because it’s an automatically installed app³⁶

She expressed embarrassment over not being more involved, as though not tracking the details of her reproductive health to the furthest extent was as a sign of neglect and irresponsibility.

Nikolas Rose discusses a shift in how we conceptualize health, which is now becoming focused on smaller, molecular facets of the biology of our body from the overall feeling of how our bodies feel, as “contemporary medical advances have prompted a view of self in increasingly smaller units” (Urquhart 2008). This focus is due to biomedicine’s development in identifying further levels of biological knowledge on the human body and biotechnology to calculate and read that information. Rose writes;

we have seen an intensification and generalization of the health-promotion strategies developed in the 20th century, coupled with the rise of a private health insurance industry, enhancing the obligations that individuals and families have for monitoring and managing their own health. Every citizen

³⁶ Interview with Cayla, 20-year-old college student, uses Apple health tracking

must now become an active partner in the drive for health, accepting their responsibility for securing their own well-being. (Rose 2006)

Health tracking devices and applications similarly create an ideal of what normal bodily functions are based on common conditions and symptoms. If the data collected on the user does not fall into the numerical brackets that are deemed healthy, then they must take action to alter their body to fit that mold.

The widespread use of e-health technologies places pressure on non-users to commit to becoming more involved in health tracking. It propagates the idea that one's health is their own responsibility, and the onset of illness is due to their own neglect of this responsibility. Being aware that they have options for tracking their health, and seeing other people tracking makes them feel like they should be doing so as well and express themselves as health-minded people.

Power and the Modern Patient

E-health technologies pushes patients to become more involved in their health and allows access to medical knowledge online and through educational applications. This allows patients to become more comfortable speaking with physicians and discuss treatments. The comfort in engaging more with providers is enabled by knowledge gain which I equate to as an increase in social power which I base off of Pierre Bourdieu's theories on habitus and social capital.

Bourdieu's theory of *habitus* suggests that individuals learn socially to use specific skills, dispositions and reactions in a given social context (Bourdieu 1991). The context, which can be referred to as the "field" that the individual is in, could be an institution, a group of people, or

any social setting. For interactions between doctors and their patients, the field that they are acting in is a medical setting such as a clinic or hospital.

Power of an individual, then, is gained through cultural capital, symbolic capital and economic capital. Cultural capital refers to the education and social knowledge of an individual that allows them to act in a manner appropriate and accepted for a given field (Bourdieu 1991). In the clinical setting, it is the doctor who has the greater cultural capital because of their vaster knowledge of medical information and skill. Unlike the patient, they went through years of medical school and experience that has given them supposedly the highest amount of cultural capital one can have in the clinical setting.

In the contemporary context of healthcare provision, patients have access to abundant medical knowledge through the internet. They can look up symptoms, medications, and even reviews of health care providers and practices. They can also now accurately track aspects of their own health. This access to medical knowledge allows patients to engage in deeper conversation with their doctors giving them more authority.

The internet not only provides sources of knowledge for patients to learn about medical information but it also gives patients more options to connect with providers farther away (virtually and simply finding practices outside their local area). Patients are also able to voice their opinion on their experiences with doctor.

Symbolic capital then refers to the accumulated professional prestige or honor of the individual (Boudieu, 1991). The title of doctor in American society is considered very prestigious and in the clinical setting doctor's are given the highest social rank and authority. This rank is followed by other health care providers according to the social hierarchy of the field of biomedicine, typically in the order of how many years of education and experience the

individual has. The patient on the other hand usually has less symbolic capital than their doctor in terms of health knowledge and prestige but also on the larger societal scale given how highly ranked doctors are. They are some of the highest paid individuals in society and their position takes the longest to acquire.

Finally, economic capital of the doctor and patient should also be taken into account in how power is determined between doctors and their patients. Physicians have one of the highest paying careers in the US, however the interaction revolves around the care of the patient, which the patient is paying for. As discussed earlier, with birth control apps for example, the patient is essentially just purchasing health products and taking on the role of the consumer and the company.

In these scenarios, the patient's consumer role provides authority and autonomy in choosing a prescription and demanding provider aid. Economic capital of the patient is also influential in instances where the patient is paying out of pocket rather than with insurance for pricey subscription-based platforms. With the patient less concerned about what health insurance will cover, they might be more empowered to negotiate with the provider's suggestions.

While economic capital could be relevant in most settings in society, the symbolic capital and cultural capital that doctors can use to their advantage are most prominent when the "field" is a clinical space. Through online communication however, this "field" becomes open to wider interpretation because the patient and provider could be instant messaging from their living rooms at home or chatting over a video call. A question to examine further then during data collection is whether patients consider the "field" to change. And if so, how is the doctor's habitus affected?

I argue though, that doctors still have the cultural and symbolic capital that places them in a position of higher authority when it comes to accuracy of diagnosis and proper treatment. Moving to an online format from the interviews I have taken either deepens this divide or challenges it based on the patient. Moving online requires the patient to be comfortable and able to use the appropriate technology. Which means for patients that are older, talking to their doctor is more work and creates more of a communication divide. Using smart phones and laptops and navigating the internet is a skill that had to be learned by the patient and is a form of cultural capital in itself that many people do not have access to, most commonly this includes more senior patients.

Conclusion

The increase in telehealth and telemedicine services within the last year has significantly impacted what it means to be a patient in the 21st century. It will likely have a significant influence on how healthcare runs permanently post-pandemic. Telehealth and telemedicine empowers patients in by opening the door to previously inaccessible medical knowledge and authority over which physicians they can receive care from.

Specifically in the scope of reproductive healthcare, this movement translates to easier access to birth control prescription and sexual health education which previously proved to be a greater challenge to access for underserved communities with limited physician access and complicated situations for young adults who prefer the anonymity online care allows for. Telemedicine allows for flexibility in meeting with physicians to discuss health issues as it requires less time to coordinate and carry out.

My surprise in finding so many sites at the beginning of the study was answered by the fact that many of these companies existed prior to the pandemic as only being able to serve patients in specific states (Zuniga 2019, Weigel 2019). They were limited to what states were allowing the use of telemedicine prior to 2020 and whether their process of care was permitted based on the amount of patient -provider communication. They were further limited to what physicians they had on staff and where their physicians were licensed. This limited which states each company could serve and explains why most of these telecontraceptive sites are not wildly different from one another, as prior to 2020, they served different areas and were not as broadly utilized to make company competition apparent.

The Covid-19 crisis has prompted telemedicine to grow exponentially, breaking down barriers of interstate licensing and cost coverage. Most of these telecontraception sites are now able to offer prescriptions to all 50 states and it brings to question how individual companies will set themselves apart in the future now that customers can choose freely between them. Nurx for example has considerably broadened its scope of service within the last year, extending far beyond birth control prescribing. Within the last two years, Nurx has begun offering dermatology prescriptions such as acne medications and retinol and by mid-2020 started offering at-home Covid tests. Priced at \$65 per test kit and \$89 per test kit with the addition of an online medical consultation (Nurx 2020).

The opening of online medical resources also pushes patients to adopt more consumer type roles in relation to healthcare and choosing who their provider is. Depending on the severity of the concern, patients pay higher prices for immediate care and choose between companies based on how much communication they prefer from their provider.

There are quite a number of telehealth and telemedicine websites all differing in what prescriptions they can provide and the type of care they offer. Out-of-pocket pricing changes the cost of consultations and prescriptions which allows for more apps to compete with each. By offering more personalized care and immediate access to consultations with physicians, companies can charge more than seeing your normal physician.

If platforms do not involve insurance companies and patients pay out of pocket, paying for each session, they can compete with the more reasonable prices of going to an office who will work with your health insurance company because they can offer on-demand service, operating on the patient's time and money. Larger companies also have their own pharmacy so they can determine their own price on prescriptions. This creates a scenario where patients who can pay higher prices can receive faster care. In this sense telemedicine may be driving a wave of medical consumerism and pushing a consumer type role onto the patient.

Increased use of e-health technologies are more apparent forms of medical consumerism and class division as a result of the commodification of "being healthy". E-health devices are rarely covered by insurance and individuals purchase them as a result of a new obsession with the ability to quantify our health. This widespread use of devices also forces individual to internalize guilt for not taking enough measures to monitor their body and being aware of their health, pushing them to purchase health related technologies. E-health technologies are often less so medical devices but rather health-minded accessories which consumers purchase based on their having the latest features and most sleek design. Patients are pressured to self-monitor their health and pay for the latest applications and devices to monitor their lifestyle habits and body data.

These findings are reflective of a year that has up until this point incorporated the most screen time than ever before. It is unlikely that telehealth technologies will be used to the same extent as they were required to be throughout the pandemic, but it is definite that telehealth will stick around. Telecommunications have proved useful for many facets of healthcare and making the patient experience overall less stressful and time-consuming. The next question is how these services will be covered in the future, and whether the policy changes we observed amidst the pandemic will stick.

Additional Images

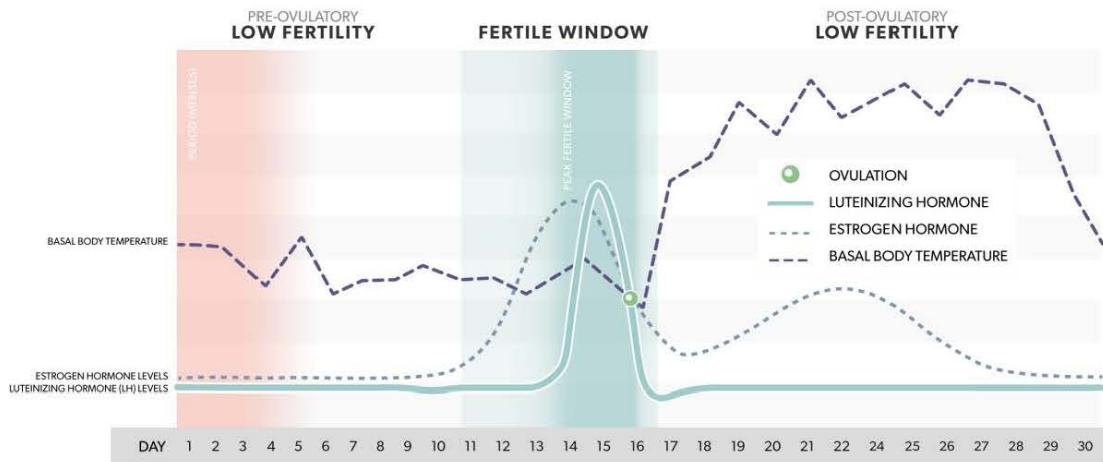


Figure 3.1 from Mira Fertility website -- Hormone level and Basal Body Temperature Chart correlated with ovulation and the fertile window.

More than a period and fertility tracking app

The Mira app offers several features beyond basic fertility tracking:

- Hormone and Ovulation Tracker:** Displays current hormone levels (e.g., LH 60mIU, Ovulation 100mIU) and tracks ovulation probability (e.g., 10).
- View Hormone Curve:** Shows a graph of hormone levels over time, with a red bar indicating the current cycle phase and a green line showing the hormone curve.
- Advanced Calendar:** Provides a detailed calendar view of past cycles, showing specific dates for ovulation, periods, and other health events.
- Get Cycle Insights:** Offers analysis of cycle length and provides insights into ovulation phases and cycle details.

Figure 3.2 Mira Application Marketing



Figure 3.3 Basal body temperature reader and phone application

Log Daily Symptoms

Log details such as period start and end dates, physical and emotional symptoms, your personal notes and more. Over time, you'll get reports that show patterns and fluctuations in your body.



Figure 3.4 Garmin's Menstrual Health Tracking Function next to a Garmin Watch

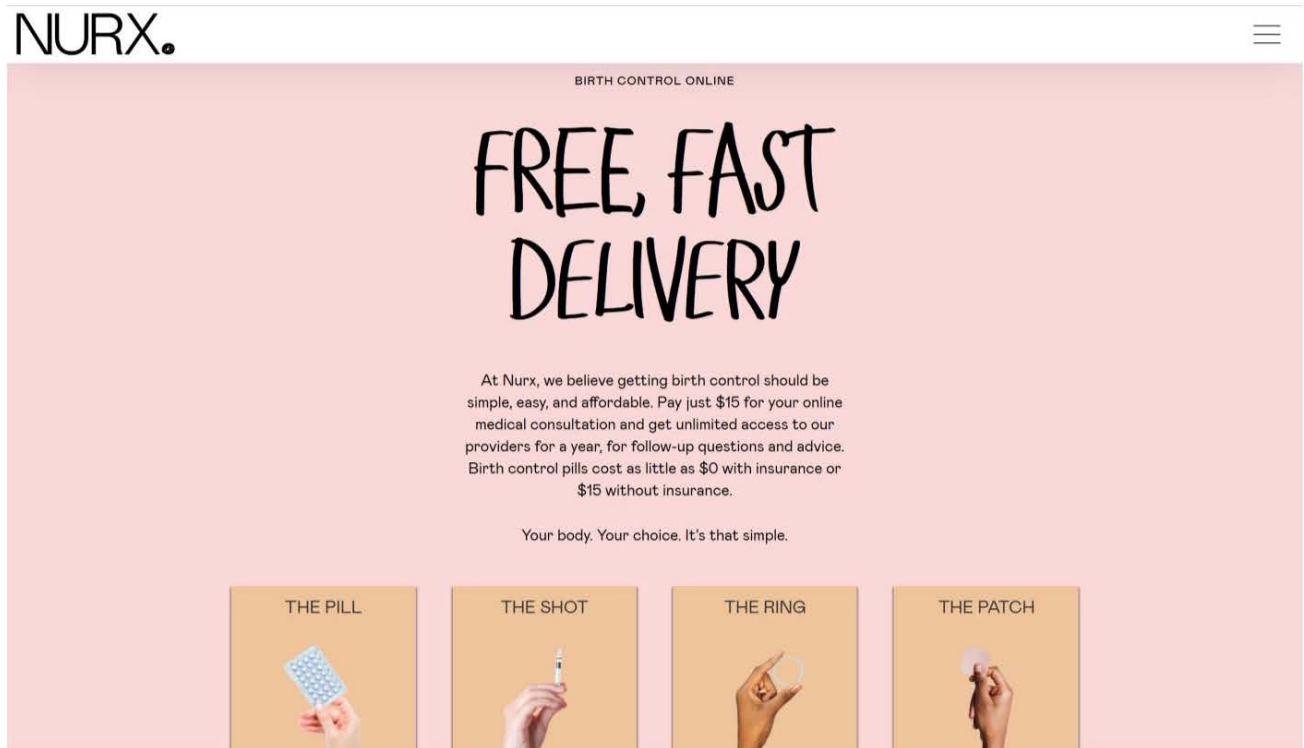


Figure 3.5 Nurx advertisement of product delivery

The screenshot shows the header of the website. On the left is the logo for 'WOMEN'S HEALTH & SURGERY CENTER OF ADVANTIA'. To its right are navigation links: 'Telemedicine', 'Services', 'Providers', 'Location', 'Patient Resources', and 'Patient Portal'. On the far right is a purple button with the phone number '540-368-9472'. Below the header is a teal banner with the text 'COVID-19: What you should know and how we can help >>' and a close button 'X'. The main content area has a light beige background and a section titled 'Before your visit' with a list of instructions:

- Please review and agree to the [Telemedicine Informed Consent](#).
- Ensure you are in a quiet, safe space with access to a computer or device with camera/microphone.
- If you can provide the following information to us at your visit it would be very helpful:
 - Height, weight, blood pressure, temperature

Figure 3.6 Instructions to patients using telemedicine services offered by a clinic in Virginia

Bibliography

Services, Board on Health Care, and Institute of Medicine. 2012. *The Evolution of Telehealth: Where Have We Been and Where Are We Going? The Role of Telehealth in an Evolving Health Care Environment: Workshop Summary*. National Academies Press (US).

<https://www.ncbi.nlm.nih.gov/books/NBK207141/>.

Bashshur RL, Armstrong PA, Youssef ZI. Telemedicine: Explorations in the Use of Telecommunications in Health Care. Springfield, Ill: Charles C Thomas; 1975

C, Zuniga, Grossman D, Harrell S, Blanchard K, and 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. J Telemed Telecare*. July 2020.

<https://doi.org/10.1177/1357633X18824828>.

Grindlay, Kate, and Daniel Grossman. 2015. “Prescription Birth Control Access Among U.S. Women at Risk of Unintended Pregnancy.” *Journal of Women’s Health* 25 (3): 249–54.

<https://doi.org/10.1089/jwh.2015.5312>.

Marshall University, Raj Singh, Mohit Harsh, Marshall University School of Medicine, Keegan Mullins, Marshall University School of Medicine, Brian Dunlap, Marshall University Department of Pediatrics, Jennie L. Yoost, and Marshall University School of Medicine. 2017. “Promoting Reproductive Health Using Telemedicine: A Prospective Study Among Rural Appalachian High School Teens.” *Marshall Journal of Medicine* 3 (2).

<https://doi.org/10.18590/mjm.2017.vol3.iss2.7>.

Searcy, Julie Johnson, and Angela N. Castañeda. 2020. “COVID-19 and the Birth of the Virtual Doula | Medical Anthropology Quarterly.” June 19, 2020.

<http://medanthroquarterly.org/2020/06/19/covid-19-and-the-birth-of-the-virtual-doula/>.

Lupton, Deborah. 2014. “Critical Perspectives on Digital Health Technologies.” *Sociology Compass* 8 (12): 1344–59. <https://doi.org/10.1111/soc4.12226>

Weigel, Gabriela, Brittni Frederiksen, Usha Ranji, and 2019. 2019. “Telemedicine in Sexual and Reproductive Health.” KFF (blog). November 22, 2019. <https://www.kff.org/womens-health-policy/issue-brief/telemedicine-in-sexual-and-reproductive-health/>.

Wootton, Richard, John Craig, and Victor Patterson. 2017. *Introduction to Telemedicine, Second Edition*. CRC Press.

Hollander, Judd E., and Brendan G. Carr. 2020. “Virtually Perfect? Telemedicine for Covid-19.” *New England Journal of Medicine* 382 (18): 1679–81. <https://doi.org/10.1056/NEJMmp2003539>.

Calton, Brook, Nauzley Abedini, and Michael Fratkin. 2020. “Telemedicine in the Time of Coronavirus.” *Journal of Pain and Symptom Management* 60 (1): e12–14.

<https://doi.org/10.1016/j.jpainsyman.2020.03.019>.

- Portnoy, Jay, Morgan Waller, and Tania Elliott. 2020. "Telemedicine in the Era of COVID-19." *The Journal of Allergy and Clinical Immunology: In Practice* 8 (5): 1489–91.
<https://doi.org/10.1016/j.jaip.2020.03.008>.
- Hale, PhD, Timothy M., and Joseph C. Kvedar, MD. 2014. "Privacy and Security Concerns in Telehealth | Journal of Ethics | American Medical Association." 2014.
<https://journalofethics.ama-assn.org/article/privacy-and-security-concerns-telehealth/2014-12>.
- Jalali, Mohammad S., Landman, Adam, and Gordon, William. 2020. "Telemedicine, Privacy, and Information Security in the Age of COVID-19" July 8, 2020.
<http://dx.doi.org.proxy.swarthmore.edu/10.2139/ssrn.3646320>
- Foucault, Michel. 1963. *The birth of the clinic; an archaeology of medical perception*. New York: Vintage Books.
- Bourdieu Pierre. 1991. *Language & symbolic power*. Cambridge: Harvard University Press
 9780674510418
- Kleinman Arthur, 1980. *Patients and healers in the context of culture: an exploration of the borderland between anthropology, medicine, and psychiatry*. Berkeley: University of California Press.
- Moerman, D. 1998. Medical Romanticism and the Sources of Medical Practice. *Complementary Therapies in Medicine* 6 (4): 198–202. [https://doi.org/10.1016/S0965-2299\(98\)80029-0](https://doi.org/10.1016/S0965-2299(98)80029-0).
- Blumhagen, D. W. 1979. The Doctor's White Coat. The Image of the Physician in Modern America. *Annals of Internal Medicine* 91 (1): 111–16. <https://doi.org/10.7326/0003-4819-91-1-111>.
- C, Zuniga, Grossman D, Harrell S, Blanchard K, and 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. J Telemed Telecare*. July 2020.
<https://doi.org/10.1177/1357633X18824828>.
- Grindlay, Kate, and Daniel Grossman. 2015. "Prescription Birth Control Access Among U.S. Women at Risk of Unintended Pregnancy." *Journal of Women's Health* 25 (3): 249–54.
<https://doi.org/10.1089/jwh.2015.5312>.
- Weigel, Gabriela, Brittni Frederiksen, Usha Ranji, and 2019. 2019. "Telemedicine in Sexual and Reproductive Health." *KFF (blog)*. November 22, 2019. <https://www.kff.org/womens-health-policy/issue-brief/telemedicine-in-sexual-and-reproductive-health/>
- Meskó, B., Drobni, Z., Bényei, É., Gergely, B., & Győrffy, Z. (2017). Digital health is a cultural transformation of traditional healthcare. *mHealth*, 3, 38.
<https://doi.org/10.21037/mhealth.2017.08.07>

- Thompson, Gregory, and Leeann Whiffen. 2018. "Can Physicians Demonstrate High Quality Care Using Paternalistic Practices? A Case Study of Paternalism in Latino Physician–Patient Interactions." *Qualitative Health Research* 28 (July): 104973231878369. <https://doi.org/10.1177/1049732318783696>.
- Elwyn, G., A. Edwards, and P. Kinnersley. 1999. "Shared Decision-Making in Primary Care: The Neglected Second Half of the Consultation." *The British Journal of General Practice: The Journal of the Royal College of General Practitioners* 49 (443): 477–82.
- Epstein, Ronald M., and Richard L. Street. 2011. "The Values and Value of Patient-Centered Care." *Annals of Family Medicine* 9 (2): 100–103. <https://doi.org/10.1370/afm.1239>.
- Emanuel, Ezekiel J., and Linda L. Emanuel. 1992. "Four Models of the Physician-Patient Relationship." *JAMA* 267 (16): 2221–26. <https://doi.org/10.1001/jama.1992.03480160079038>.
- Kaba, R., and P. Sooriakumaran. 2007. "The Evolution of the Doctor-Patient Relationship." *International Journal of Surgery* 5 (1): 57–65. <https://doi.org/10.1016/j.ijsu.2006.01.005>.
- Hellín, T. 2002. "The Physician–Patient Relationship: Recent Developments and Changes." *Haemophilia* 8 (3): 450–54. <https://doi.org/10.1046/j.1365-2516.2002.00636.x>.
- Umoh, Ruth. n.d. "How Virtual Therapy Apps Are Trying To Disrupt The Mental Health Industry." Forbes. Accessed March 25, 2021. <https://www.forbes.com/sites/ruthumoh/2019/10/11/how-virtual-therapy-apps-are-disrupting-the-mental-health-industry/>.
- Oudshoorn, Nelly. 2009. "Physical and Digital Proximity: Emerging Ways of Health Care in Face-to-Face and Telemonitoring of Heart-Failure Patients." *Sociology of Health & Illness* 31 (3): 390–405. <https://doi.org/10.1111/j.1467-9566.2008.01141.x>.
- Weigel, Gabriela, Brittni Frederiksen, Usha Ranji, and 2019. 2019. "Telemedicine in Sexual and Reproductive Health." KFF (blog). November 22, 2019. <https://www.kff.org/womens-health-policy/issue-brief/telemedicine-in-sexual-and-reproductive-health/>.
- "What Birth Control Method Is Right for You?" 2016. Womenshealth.Gov. December 23, 2016. <https://www.womenshealth.gov/a-z-topics/birth-control-methods>.
- ""Is It Safe to Order Your Birth Control Online?" 2019. WebMD. September 25, 2019. <https://www.webmd.com/sex/birth-control/news/20190925/is-it-safe-to-order-your-birth-control-online>.
- "Side Effects of Hormonal Contraceptives." 2010. *American Family Physician* 82 (12): 1509.
- "CDC - Appendix D - US SPR - Reproductive Health." 2019. January 16, 2019. <https://www.cdc.gov/reproductivehealth/contraception/mmwr/spr/appendixd.html>.

“How the Pandemic and Telemedicine May Affect Birth Control Access.” 2020 Cassell, Dana K. August 10, 2020 <https://www.healthline.com/health-news/how-telemedicine-can-help-people-access-birth-control-during-the-pandemic>.

Michigan, Jesse C. Vivian, RPh, JD Professor, Department of Pharmacy Practice College of Pharmacy and Health Sciences Wayne State University Detroit. 2016;41(2):48-50. “Pharmacists Prescribing Birth Control.” Accessed January 24, 2021.
<https://www.uspharmacist.com/article/pharmacists-prescribing-birth-control>.

“How to Get Birth Control Without a Doctor’s Prescription in 3 Simple Steps - GoodRx.” 2020. The GoodRx Prescription Savings Blog. October 2, 2020. <https://www.goodrx.com/blog/heres-how-to-get-birth-control-without-a-doctors-prescription/>.

Grindlay, Kate. 2020. “What’s the Law in Your State? | Free the Pill.” May 27, 2020.
<https://freethepill.org/statepolicies/>.

“Yasmin Prices, Coupons & Savings Tips.” n.d. GoodRx. Accessed January 24, 2021.
<https://www.goodrx.com/yasmin>.

“Buy Yasmin Birth Control Online, Get Free Delivery - Nurx.” n.d. Accessed January 24, 2021.
https://www.nurx.com/birth-control/combination-pill/yasmin?utm_source=goodrx&utm_medium=affiliate&utm_campaign=cpc

“Birth Control Methods & Options | Types of Birth Control.” n.d. Accessed March 27, 2021.
<https://www.plannedparenthood.org/learn/birth-control>.

Botrugno, Carlo. 2019. “Information Technologies in Healthcare: Enhancing or Dehumanising Doctor–Patient Interaction?” *Health*, December, 1363459319891213.
<https://doi.org/10.1177/1363459319891213>.

Misselbrook, David. 2013. “Foucault.” *The British Journal of General Practice* 63 (611): 312.
<https://doi.org/10.3399/bjgp13X668249>.

Foucault, Michel, Alan Sheridan, and Michel Foucault. *The Birth of the Clinic : an Archaeology of Medical Perception* [1st American ed.]. New York: Pantheon Books, 1973, orig. published 1963.

Sinha, Arushi. 2000. “An Overview of Telemedicine: The Virtual Gaze of Health Care in the Next Century.” *Medical Anthropology Quarterly* 14 (3): 291–309.
<https://doi.org/10.1525/maq.2000.14.3.291>.

Hollander, Judd E., and Brendan G. Carr. 2020. “Virtually Perfect? Telemedicine for Covid-19.” *New England Journal of Medicine* 382 (18): 1679–81. <https://doi.org/10.1056/NEJMmp2003539>.

Calton, Brook, Nauzley Abedini, and Michael Fratkin. 2020. “Telemedicine in the Time of Coronavirus.” *Journal of Pain and Symptom Management* 60 (1): e12–14.
<https://doi.org/10.1016/j.jpainsyman.2020.03.019>.

Portnoy, Jay, Morgan Waller, and Tania Elliott. 2020. "Telemedicine in the Era of COVID-19." *The Journal of Allergy and Clinical Immunology: In Practice* 8 (5): 1489–91.
<https://doi.org/10.1016/j.jaip.2020.03.008>

Reed, Mary E., Jie Huang, Rahul Parikh, Andrea Millman, Dustin W. Ballard, Irwin Barr, and Craig Wargon. 2019. "Patient–Provider Video Telemedicine Integrated With Clinical Care: Patient Experiences." *Annals of Internal Medicine* 171 (3): 222–24. <https://doi.org/10.7326/M18-3081>.

Bashshur, Rashid L. 2009. "On the Definition and Evaluation of Telemedicine | Telemedicine Journal." January 29, 2009. <https://www.liebertpub.com.proxy.swarthmore.edu/doi/abs/10.1089/tmj.1.1995.1.19>.

"History of Telemedicine & Telehealth: When Did It Start." n.d. *EVisit* (blog). Accessed January 25, 2021. <http://evisit.com/resources/history-of-telemedicine/>.

Gruessner, Vera. 2015. "The History of Remote Monitoring, Telemedicine Technology." MHealthIntelligence. November 9, 2015. <https://mhealthintelligence.com/news/the-history-of-remote-monitoring-telemedicine-technology..>

"A Brief History of Telehealth Technology." 2019. *InTouch Health* (blog). January 9, 2019. <https://intouchhealth.com/a-brief-history-of-telehealth/>.

"10 Best Telemedicine Companies." 2020. Healthline. May 22, 2020. <https://www.healthline.com/health/best-telemedicine-companies>.

Telemedicine, Institute of Medicine (US) Committee on Evaluating Clinical Applications of, and Marilyn J. Field. 1996. *Evolution and Current Applications of Telemedicine. Telemedicine: A Guide to Assessing Telecommunications in Health Care*. National Academies Press (US). <https://www.ncbi.nlm.nih.gov/books/NBK45445/>.

Goodman, Matt. 2016. "How the North Texas Telemedicine Revolution Began." *D Magazine* (blog). November 2016. <https://www.dmagazine.com/publications/d-ceo/2016/november/how-the-north-texas-telemedicine-revolution-began/>.

Pew Research Center and Internet & Technology. 2019. "Demographics of Mobile Device Ownership and Adoption in the United States." *Pew Research Center: Internet, Science & Tech* (blog). June 12, 2019. <https://www.pewresearch.org/internet/fact-sheet/mobile/>.

Siwki, Bill. 2017. "Comparing 11 Top Telehealth Platforms: Company Execs Tout Quality, Safety, EHR Integrations." Healthcare IT News. August 2, 2017. <https://www.healthcareitnews.com/news/comparing-11-top-telehealth-platforms-company-execs-tout-quality-safety-ehr-integrations>.

Epstein, Helen-Ann Brown. 2020. "Virtual Meeting Fatigue." *Journal of Hospital Librarianship* 20 (4): 356–60. <https://doi.org/10.1080/15323269.2020.1819758>.

- Pudlinski, Christopher. 2005. "Doing Empathy and Sympathy: Caring Responses to Troubles Tellings on a Peer Support Line." *Discourse Studies* 7 (3): 267–88. <https://doi.org/10.1177/1461445605052177>.
- Oudshoorn, Nelly. 2009. "Physical and Digital Proximity: Emerging Ways of Health Care in Face-to-Face and Telemonitoring of Heart-Failure Patients." *Sociology of Health & Illness* 31 (3): 390–405. <https://doi.org/10.1111/j.1467-9566.2008.01141.x>.
- Oudshoorn, Nelly. 2008. "Diagnosis at a Distance: The Invisible Work of Patients and Healthcare Professionals in Cardiac Telemonitoring Technology." *Sociology of Health & Illness* 30 (2): 272–88. <https://doi.org/10.1111/j.1467-9566.2007.01032.x>.
- Lupton, Deborah, and Sarah Maslen. 2017. "Telemedicine and the Senses: A Review." *Sociology of Health & Illness* 39 (8): 1557–71. <https://doi.org/10.1111/1467-9566.12617>.
- "5 Huge Ways the Pandemic Has Changed Telemedicine." n.d. American Medical Association. Accessed November 25, 2020. <https://www.ama-assn.org/practice-management/digital/5-huge-ways-pandemic-has-changed-telemedicine>.
- "10 Best Telemedicine Companies." 2020. Healthline. May 22, 2020. <https://www.healthline.com/health/best-telemedicine-companies>.
- Cocksedge, Simon, Bethan George, Sophie Renwick, and Carolyn A. Chew-Graham. 2013. "Touch in Primary Care Consultations: Qualitative Investigation of Doctors' and Patients' Perceptions." *British Journal of General Practice* 63 (609): e283–90. <https://doi.org/10.3399/bjgp13X665251>.
- CDC. 2020. "Coronavirus Disease 2019 (COVID-19)." Centers for Disease Control and Prevention. February 11, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html>.
- "MEDICARE TELEMEDICINE HEALTH CARE PROVIDER FACT SHEET | CMS." n.d. Accessed November 26, 2020. <https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet>.
- "FSMB | FSMB Policies." n.d. Accessed November 26, 2020. <https://www.fsmb.org/advocacy/policies/>.
- "Telemedicine_policies_by_state.Pdf." n.d. Accessed November 26, 2020. https://www.fsmb.org/siteassets/advocacy/key-issues/telemedicine_policies_by_state.pdf.
- "From Today to Telemedicine: 3 Gaps and Risks." n.d. Healthcare Dive. Accessed November 26, 2020. <https://www.healthcaredive.com/sponsored/from-today-to-telemedicine-3-gaps-and-risks/588497/>.

- Publishing, Harvard Health. n.d. "Get Connected with Telemedicine." Harvard Health. Accessed November 27, 2020. <https://www.health.harvard.edu/staying-healthy/get-connected-with-telemedicine>.
- Fox, Nick J. 2017. "Personal Health Technologies, Micropolitics and Resistance: A New Materialist Analysis." *Health* 21 (2): 136–53. <https://doi.org/10.1177/1363459315590248>.
- Lupton, Deborah. 2013. "The Digitally Engaged Patient: Self-Monitoring and Self-Care in the Digital Health Era." *Social Theory & Health* 11 (3): 256–70. <https://doi.org/10.1057/sth.2013.10>.
- Lupton, Deborah. 2014. "Critical Perspectives on Digital Health Technologies." *Sociology Compass* 8 (12): 1344–59. <https://doi.org/10.1111/soc4.12226>
- Lacy, Elena. n.d. "Which Women's Health App Is Right For You?" *Wired*. Accessed January 15, 2021. <https://www.wired.com/story/best-womens-health-apps-2018/>.
- "Mira Fertility Tracker Review." 2019. The Medical Futurist. August 29, 2019. <https://medicalfuturist.com/mira-fertility-tracker-review>.
- "Basal Body Temperature for Natural Family Planning - Mayo Clinic." 2018. November 13, 2018. <https://www.mayoclinic.org/tests-procedures/basal-body-temperature/about/pac-20393026>.
- "What Is Tempdrop? - FAQS and Contact." n.d. Accessed January 22, 2021. <https://tempdrop-faq.helpscoutdocs.com/article/19-what-is-tempdrop>.
- "Ovia Health." n.d. Accessed January 22, 2021. <https://www.oviahealth.com/>.
- "Why Track Fertility Hormones." n.d. Mira Fertility Tracker. Accessed January 22, 2021. <https://www.miracare.com/how-mira-works/tracking-fertility-hormones/>.
- Ahlin, T., 2016. Anthropology of e/m-health and telemedicine: Time to pay attention. Web publication/site, Anthropology News
- Caddy, Becca, 2019 "Garmin's New Women's Health Tracking Features Explored." Wareable. July 17, 2019. <https://www.wearable.com/garmin/garmin-womens-health-tracking-guide-7417>
- Rose, Nikolas. 2006. *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton, UNITED STATES: Princeton University Press. <http://ebookcentral.proquest.com/lib/swarthmore/detail.action?docID=483582>.
- Urquhart, Troy. 2008. "Nikolas Rose. The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century." *Rocky Mountain Review* 62 (2): 172–74.