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Perceptions of Adult Patients Accessing Telehealth in an Urban Medical Group

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ABSTRACT

PERCEPTIONS OF ADULT PATIENTS ACCESSING
TELEHEALTH IN AN URBAN MEDICAL GROUP

Problem: Although implementation of in-patient electronic healthcare records is nearly complete in the United States, this achievement has not translated into consumer-to-business telehealth in the primary care setting. Because there are few studies that describe how and why patients select telehealth, the aim of this study was to learn about perceptions of adult patients in an urban setting when telehealth options are available. Research questions included a) How do patients select any type of appointment? b) How do patients perceive and use telehealth options? c) How and when might telehealth be useful in the future?

Methods: A qualitative study design was used to collect data through semi-structured open-ended interviews from 21 patients in a primary care practice. Interviews were transcribed and analyzed using grounded theory methodology.

Results: The theory of weighing options emerged from the data. The process of weighing options explains how patients balance factors of urgency, timing/scheduling, relationships, distance, convenience, and various technical aspects before selecting a telehealth encounter or not. If all the factors show a benefit, then the decision is made to use telehealth. Information obtained from the patient perspective may identify strategies to support increased use of telehealth.

Conclusion: The benefit of this study will be to facilitate awareness among patients about telehealth options. This information can be used by providers and nurses to maintain caring while supporting patients who choose virtual care.

Katharine Shepherd West
May 2019

PERCEPTIONS OF ADULT PATIENTS ACCESSING

TELEHEALTH IN AN URBAN MEDICAL GROUP

by

Katharine Shepherd West

A project

submitted in partial

fulfillment of the requirements for the degree of

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APPROVED

For the California State University, Northern Consortium
Doctor of Nursing Practice:

We, the undersigned, certify that the project of the following student meets the required standards of scholarship, format, and style of the university and the student's graduate degree program for the awarding of the Doctor of Nursing Practice degree.

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"Students are not greater than their teachers. But the student who is fully trained will become like the teacher" (Luke 6:46, New Living Translation).

Soli Deo Gloria

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May 2019

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CHAPTER 1: INTRODUCTION

Patients want, need, and deserve the right health care at the right time in the right place. Telehealth is a wide-ranging solution well-suited for meeting these requests, available to make digital connections between patients and providers for almost all aspects of healthcare. From a combination of the Greek *tele (τηλε-)* "afar" and Old English *hǽlþ* "soundness of body, to be made whole" ("Tele-", 2019; "Health", 2019), telehealth means "to heal from afar". Used as an overarching term encompassing many more specific "tele" concepts, telehealth also includes telemedicine for diagnosis and treatment, teledermatology or telepsych as examples of specialty-specific application, or telenursing to describe the actions of care personnel providing supportive care, patient education, or other practices in the nursing domain. Telehealth also describes the infrastructure of the necessary technologies and processes:

- Technologies include broadband networks, the Internet and social media, niche software applications, computer hardware, and smart phones and other smart devices.
- Processes include regular telephone calls, faxing, texting, and all types of digital data transmission (Institute of Medicine, 2012; Jennett, Gagnon, & Brandstadt, 2005; Li & Wilson, 2013; Agate, 2017).

Although there is no universally accepted definition of telehealth, this study embraced the definition as adopted by the California Business and Professional Code:

"Telehealth" means the mode of delivering health care services and public health via information and communication technologies to facilitate the

diagnosis, consultation, treatment, education, care management, and self-management of a patient's health care while the patient is at the originating site and health care provider is at the distant site. (CA BPC §2290.5, (a)(6))

Access and Adoption

Telehealth has the potential to improve all three identified barriers to access: insurance coverage, geographic availability, and timeliness of care. At the national level, the Healthy People 2030 (2019) initiative has recommended that access using telehealth should become a full research objective, AHS-2030-R02, promoting it from a monitored focus area in the Healthy People 2020 Leading Health Indicators (HP2020, 2018). The California state version of Healthy People, Let's Get Healthy California (2016), has incorporated access to services as one of six primary goals in the state healthcare system. One identified opportunity for accomplishing this is to focus on designing a patient-centric approach of "build with, not for" patients. At the local county level, the setting of this project, the Orange County Health Improvement Partnership (Orange County Health Care Agency, 2017) has also identified the need to identify and address barriers to access.

From the earliest transmissions, telehealth has been very provider-centric focusing on the equipment and processes necessary to meet the provider's needs to render diagnostic care at a distance. Later expansions moved beyond diagnostics to embrace documentation, order transmittals, coding and billing, and medical record archiving and sharing (Agate, 2017). Often, due to cost and availability, the computer, network, and broadband connection infrastructure was provided by the transmitting provider for the benefit of the patient. For example, because there is limited broadband outside of rural towns even today, rural patient-to-specialist

consultations required and still require patients to connect in a provider-centric manner from a rural provider's office to the urban specialist (McPhee, 2014; Poulsen, Roberts, Millen, Lakshman, & Buttner, 2014; Serrano et al., 2017).

In the past few years, with the evolution away from the direct local support of a familiar provider, telehealth has become more patient-centric offering direct patient-to-provider access. With this approach, patients initiate the connection themselves from a personal location using their own electronic device and are responsible for obtaining the broadband connection. Because of the increased use of personal smartphones and personal computing devices across all industries, the expectation had been that healthcare consumers would naturally embrace virtual care in parallel to the full implementation of the telehealth infrastructure. However, an equivalent uptake by patients using telehealth has not transpired.

The 2017 Virtual Visits Consumer Joint Survey reported a promising statistic that 19% of patients surveyed had used a virtual visit and 77% expressed interest (Heath, 2017). A year later, CNBC news reported adoption of telehealth had stagnated at 18% despite nearly universal implementation (Farr, 2018). Some of the factors identified in the CNBC report were lack of awareness of the availability of telehealth, the branding of the term "telemedicine" as being not very descriptive, and confusion over cost (Farr, 2018). In early 2019, Associated Press News confirmed that patient adoption had stalled. Even though 80% of US companies offered a telemedicine healthcare benefit, only 8% of employees had used it. By spring 2019, in an astonishing display of incentivizing virtual visits, Walmart dropped the $40 co-pay for virtual visits to $4 (AP News, 2019). Concentrated efforts directed toward patient education and support for using telehealth have not overcome patient reluctance. One piece of information gained from recent studies about patient reluctance was identification of the fact that old

habits and emotions may be driving the decisions to return to the office when sick (AP News, 2019).

Without patient acceptance and adoption of telehealth, telehealth sustainability will be limited to provider-centric options, thus diminishing the anticipated impact on improving healthcare access or outcomes as a result. Although studies have addressed patient use and satisfaction of telehealth, there have been few studies directly examining the perceptions of telehealth by adult patients. This has made it challenging for healthcare providers to know how to plan services or know which specific technology or support would encourage patient adoption. The aim of this study was to explore patient perceptions to learn how to support patients and encourage further telehealth adoption.

Background

The first known article mentioning telehealth was in 1878 in a Lancet article with two letters to the editor suggesting the use of the newly invented telephone for auscultation of muscle contractions or heart sounds of patients in another location (Aronson, 1977). Twenty-five years later in 1905, Einthoven succeeded in transmitting the first heart sounds by telephone (Bashur, Shannon, Krupinski, & Grigsby, 2013). Progress in electricity and radio led to the first remotely recorded and radio-transmitted EKG data 50 years later as reported by Holter (1949). Deploying telehealth with its capabilities to manage health outcomes began in earnest during the 1960s when the US Space Program transmitted biometric data from space to earth via telemetric links (Simpson, 2013).

As telehealth moved from government and academia into frontline healthcare, it was implemented to overcome geographical challenges for

underserved rural patients who typically lacked access with distant specialists (Agate, 2017). Wicklund (2017) recommended defining telehealth barriers by access, not geography. Sweeney (2017) also argued that geography should not be the only parameter of access, quoting statistics that medical appointments "are just as hard — if not harder — to come by in major cities" (para. 3). Urban access wait times for new appointments are reported to have increased 30% since 2014 (Agate, 2017). This is confirmation that urban patients might also benefit from the same improved access to providers and timeliness of care as provided by telehealth in rural areas. And yet, even though the telehealth infrastructure is in place, urban patients have not embraced telehealth as expected even when surveys on patient attitudes about telehealth indicate a willingness to do so (Abrams, Burrill, & Elsner, 2019; Arndt, 2019).

Purpose of the Study

The purpose of this qualitative descriptive study was to focus on perceptions of patients in an urban medical group and identify how they decide to connect with their providers when telehealth is an option. The questions explored in this study were:

How did patients select any type of appointment to seek care?

How did patients perceive and use available telehealth options?

Under what circumstances might telehealth be useful in the future?

Conceptual Framework

Symbolic interactionism (SI) is a conceptual framework used to guide certain qualitative methodologies. As a conceptual framework, SI focuses on human behavior: people's thought processes, how they assign importance to events, and how they choose to interact with the world because of their beliefs and

experiences (Chenitz & Swanson, 1986). The researcher's attempt to understand, describe, and discover phenomenon of interest strictly from the perspective of patients' own experience is well served by SI. Having telehealth options available is only one of many factors influencing a patient's decision to use it. How important is telehealth to patients? What beliefs and previous experiences about healthcare guide their choices about telehealth? It was anticipated that using the SI framework for this project might facilitate a new and different conceptualization and understanding of how urban patients seek care when telehealth options are available.

Significance of the Study

The Office of the National Coordinator (ONC) for Health Information Technology (HIT) reported that by 2017 an electronic healthcare record (EHR) had been adopted by 86% of office-based physicians and by 96% of all hospitals (ONC HIT, 2019a; ONC HIT, 2019b). Yet adoption of the EHR did not correlate with using telehealth services in the ambulatory setting. Abrams et al. (2018) reported that the Deloitte 2018 Surveys of US Healthcare Consumers and Physicians found only 14% of physicians had the capability to provide a video visit. For physicians who provided the option, only 23% of their patients ever used a video visit. This typical low patient involvement has also been the experience of the Caduceus Medical Group in Orange County, California, the site of the study, where telehealth has been standard since 2011 and video visits since 2016. "I would give anything to know why and how my patients decide to use telehealth when they do. I can't plan", was the statement from G. DeNicola, MD, family practice physician and Caduceus Medical Group CEO/CMO (personal communication, April 20, 2018). Because patient motivations and perspective are

largely unexamined in telehealth, knowing when, how, and why patients decide to use telehealth will provide ambulatory nurses and physicians information that can be used to align telehealth offerings with how patients want to use telehealth.

CHAPTER 2: LITERATURE REVIEW

As technology and medicine have become linked, most research has focused on the practice of telemedicine from the perspective of physicians about optimal use of technology to diagnose and treat. It was noted that telehealth studies in the literature could be grouped according to one of four areas of concentration:

1. technology-centric: issues and concerns with design, implementation, and maintenance of the telehealth infrastructure (networking, hardware, software, broadband),

2. regulatory-centric: regulatory and legal concerns about software certification, interstate licensing, maintaining personal health information privacy and security, and electronic billing and reimbursement,

3. provider-centric: perspectives and needs of providers using telehealth, and

4. patient-centric: limited to healthcare outcomes and satisfaction with telehealth programs and delivery systems.

Many of these studies described efforts to improve healthcare outcomes across distances. Accordingly, considerable attention over the course of telehealth implementation has focused on improving geographical access, with rural patients receiving the most attention.

A general review of the literature was performed followed by a focused review on patient-centric studies only. The focused review was initially performed using the broad OneSearch search engine which indexes and includes results from the health-specific databases of CINAHL and PubMed. Keywords used included

telehealth, telemedicine, patient satisfaction, patient perception, access to care, virtual visits, rural, urban, end-user acceptance, doctor–patient communication, and usability. When few articles specifically related to consumer perceptions and satisfaction with virtual healthcare were forthcoming, a search was performed into the collateral fields of marketing and social media acceptance using the keywords of communications media, app experience, consumer satisfaction, consumer engagement, and consumer behavior. Pertinent articles accepted in support of this study were divided among six subcategories: telehealth patients (42), telehealth reluctance (30), telehealth providers (24), telehealth technology (63), telehealth history (4), and telenursing (14).

Relevant patient-centric studies were further grouped into two categories according to influential factors: contextual factors and social factors. Both contextual and social factors impact the use of telehealth. Reports or studies that examined patient rationale or reasons for not embracing telehealth could not be found despite the reports noting the stagnation of patient engagement with telehealth. Since this project focused on the patient decision-making process, the literature review was limited to studies of patient-centric concerns.

Contextual Factors of Telehealth

With access being the most commonly reported contextual concern, Kullgren, McLaughlin, Mitra, and Armstrong (2012) assessed the frequency by which adults with affordability barriers also experienced nonfinancial barriers of access. They found that nonfinancial barriers for US adults were more common reasons than affordability barriers contributing as much to unmet health needs or delayed care as limited access. The most common barrier identified was that of

accommodation, e.g. scheduling. This barrier could be easily resolved using telehealth to provide flexible schedules or email communication.

Bradford, Caffery, and Smith (2015) studied patient awareness, experiences, and perceptions of rural telehealth. Findings of the study showed that rural populations accept and normalize the need to travel. Surprisingly, they found that rural patients seemed to accept paternalism from their providers thus potentially decreasing their own empowerment in matters of their own health. Also identified was a lack of community awareness of the availability of telehealth, highlighting the need to increase marketing and public promotion of telehealth as an acceptable option. Future research was suggested to focus on how telehealth can empower patients as partners in their own care and increase public promotion.

Within the context of patient education at a distance, telehealth provides a convenient solution. Jaglal et al. (2013) reported the effectiveness of delivering the Stanford Chronic Disease Self-Management Program (CDSMP) as a telehealth patient education course. Presented to rural patients in Canada, the CDSMP was delivered as a multi-site telehealth program instead of the usual single-site classes in person. Participants across Northern Ontario were linked from rural satellite clinics to the sponsoring site in Toronto to form one telehealth group. Improved behaviors in the telehealth group were as effective as in a single-site group. Another study showed equal benefit for suburban patients experiencing the CDSMP as a web-based intervention with significant improvement in health markers at 1 year (Lorig, Ritter, Laurent, & Plant, 2006). Brakman, Ellsworth, and Gold (2017) reported that using telehealth for delivering reproductive health education and services programs for adolescents in several US states was found to be highly efficient at overcoming the usual barriers of access as well as those of

embarrassment or confidentiality. An additional finding supported that the use of telehealth technologies should not be limited to email and video visits but also include a broad range of options such as mobile devices and web apps.

Telehealth education programs in the urban context have also been reported. Carter, Nunlee-Bland, and Callender (2011) designed and implemented a successful online diabetes self-management program for inner-city African Americans with diabetes. Improved hemoglobin A1c and body mass index measurements were achieved by participants. Garell and Westfall (2015) implemented multidisciplinary pediatric obesity care via telehealth to patients at two clinics in the Los Angeles Unified School District. In addition to acceptable weight outcomes, 88.3% of providers and 93% of parents and children reported satisfaction with the telehealth approach. Specifically, 96% of the participants noted "it was easier to have a telehealth appointment than travel to UCLA" (para.3).

Evidence-based research has studied the expansion of telehealth to include telenursing for ancillary services such as case management (Kilbridge, Hood, & Levinthal, 2014; McPhee, 2014) and routine follow-up (Thakar, 2018). With the proliferation of the Internet of Things (IoT), remote monitoring is becoming more common in the application of telehealth modalities (Haghi, Thurow, & Stoll, 2017). Even as telehealth applications are proliferating, Zheng (2017) noted that successful implementation depended on the patient's willingness to use it.

Social Factors of Telehealth

Poulsen, Roberts, Millen, Lakshman, and Buttner (2014) assessed patient satisfaction with a rheumatology telemedicine service in rural Australia and found more than 85% of the respondents identified telehealth as saving time and money

associated with lengthy travel for care. Patients did not use their own devices to connect to the specialist in town but used the technology and broadband of a rural clinic. There was no difference in patient satisfaction for new patients versus established patients using telehealth at such great distances. In a similar study on rural rheumatology patients in the northern communities of Canada, Jong and Kraishi (2004) reported a comparative study on the effectiveness of telehealth to provide specialist care. Video conference visits were preferred over travel to Toronto due to the benefits of receiving immediate feedback, experiencing increased accessibility with decreased travel costs, and improvement in local management by the primary care provider.

Polinski et al. (2016) assessed patient satisfaction in a telehealth visit model where the patient was assisted by a nurse at the primary care clinic to communicate with an off-site provider via video conferencing. Given the opportunity to try a telehealth visit, patients were very satisfied with the quality of care, the convenience, the logistics, and technology associated with the visit. Overall, telehealth was found to be just as acceptable as a traditional visit, with quality and convenience highlighted as a key feature of acceptability.

Edwards et al. (2014) sought to answer the question if patients with chronic diseases were interested in using telehealth. This study confirmed that regardless of the sociodemographics, the most important factor was the patient's confidence in using technology, with a strong preference for phone-based and email-based telehealth. This study was one of the first that gathered ratings about patient interest in different forms of telehealth. This study demonstrated that future telehealth interventions might be best received if delivered by phone or email and not over social media.

These telehealth research studies were selected because they attempted to answer questions about adoption and acceptance. The findings identified patient-centric logistical concerns but not internal motivational concerns. Patient-centric concerns that were reviewed included technical barriers to using telehealth, satisfaction with quality and convenience, reduced wait times, the use of telehealth for providing chronic disease online self-management programs, identification of patient interest, perceptions based on confidence to use telehealth, and satisfaction with various telehealth offerings with a preference for phone and email technologies.

<p style="text-align:center">Collateral Models and Theories on Access and Use
of Technology</p>

The healthcare literature review was remarkable for the lack of patient-centric models or theories to inform the process by which patients access and use telehealth. Penchansky and Thomas' model of access to care was reviewed as a general healthcare model that could be applied to telehealth. Also reviewed were collateral studies from the retail marketing and corporate business fields, including Blumler and Katz's uses & gratification theory (UGT) and the marketing model of consumer brand experience as influenced by gamification and app marketing principles.

The Penchansky and Thomas model of access to care describes the fit between the patient and healthcare team through five independent yet interconnected dimensions:

1. availability (supply and demand),

2. accessibility (location),

3. accommodation or adequacy (well organized, e.g. hours of operation, wheelchair access),

4. affordability (financial and incidental costs), and

5. acceptability (consumer perception) (Saurman, 2015).

When healthcare services are designed, implemented, and evaluated, access is optimized if all five dimensions are included. With the advent of telehealth, Saurman recently proposed an expansion of the model to append a sixth dimension:

6. awareness (effective communication and information strategies).

Awareness was described as a two-way process: providers need to be aware of the local context and social needs of their patients and patients need to be aware that services are available in order to use them. Saurman described a study where patients thought a particular health intervention program was needed but until prompted, they did not know that it existed or how to use it. The conclusion was that, in addition to the initial five dimensions, the dimension of awareness also influences access, thus strengthening Penchansky and Thomas's conceptual framework (Saurman, 2015).

The uses & gratification theory (UGT) was reviewed and found to be informative explaining how and why consumers use technology. Blumler and Katz collaborated with other media researchers to develop UGT in 1973-1974 as a way to understand and predict how people interact with mass media (Grant, 2010). Grant described how UGT was based on earlier attempts to explain radio and television viewing habits in the 1940s and is based in part on Maslow's needs and motivation theory. In recent years, UGT has been applied to explain choices with computer media. Alpert, Krist, Aycock, & Kreps (2017) have suggested that UGT may be informative when applied to understanding today's consumer behavior with digital healthcare. The five categories of UGT and definitions are:

- cognitive (desire for information and knowledge),

- affective (emotional experiences),
- personal integrative (an individual's value system),
- social integrative (affiliation and being part of community), and
- tension release (the release of stress).

Alpert et al. (2017) applied UGT to healthcare to understand how individuals interacted with an online patient portal. Both patients and providers were queried on which features would improve the user experience according to the five main UGT categories. The conclusions were that although both patients and providers were beginning to embrace patient portals for data collection and management, enhancements were still needed for the portal to become a truly important tool. Despite there being five UGT categories, the researchers found that the patient portal was primarily used for cognitive needs (60%) and secondarily for affective (21%) needs. It was speculated that the other three UGT categories were rarely used (social integrative and personal integrative) or never used (tension release). Alpert's study participants identified a desire for additional features that overlapped all the categories such as online scheduling, prescription refills, and the ability to track individual data (e.g., calories and exercise). The researchers concluded that because patients are seldom involved in the planning and design of such portals, the last three categories could have had meaning to the patient but did not. Both Penchansky and Thomas' model of access dimensions and UGT categories may be informative when designing telehealth services and supportive when evaluating, describing, or understanding patient adoption and interaction with them.

Studies and reports related to consumer engagement with technology and research related to consumer brand experience are well documented in the retail marketing literature. For instance, Schiff (2017) described how adopting

gamification principles could attract, educate, and retain customers across diverse businesses, specifically mentioning healthcare. Gamification is defined as "the process of adding games or game-like elements to something so as to encourage participation" ("gamification", 2019).

Lee, Jin, and Botelho (2019) reported a marketing study examining the relationship between subfactors of gamification (fun, rewards, competition, and storytelling) with the moderating effect of the 4Rs of app marketing:

- *reflex* or creating an instantaneous response,
- *reality* or experiencing things as they exist,
- *real place* or location, and
- *real communication* or real-time information sharing.

Lee et al. found that attending to the 4Rs could deliver customized digital information to consumers resulting in successful engagement with the business. When gamification interacts with the 4Rs, the consumer brand experience is the result. The researchers explained that the consumer brand experience can be understood through five strategic experiential modules:

- *sense marketing* appealing to the five senses and providing differentiated value;
- *feel marketing* appealing to the consumer's moods, feelings, and emotions;
- *think marketing* appealing to an intellectual evaluation of goods and services;
- *act marketing* encouraging interactions related to physical behaviors and lifestyle; and
- *relate marketing* creating experiences and connecting consumers with social and cultural meaning by engaging with the product.

Lee et al. concluded that companies embracing e-commerce may find that managing the consumer brand experience through gamification and the 4Rs will be critical for business success. Strategies like these from marketing and the corporate business world could be useful when developing optimal telehealth approaches that patients will actually use.

Summary

This literature review focused on patient-centric studies to inform the essence of this study on patient perceptions related to telehealth. Patient-centric studies reviewed were classified according to contextual factors or social factors. Studies describing personal factors of patient perceptions for selection or interaction with telehealth were not found. Because of the lack of studies on patient perceptions and engagement, collateral research from the retail marketing and corporate business literature were reviewed. The literature review confirms the need for this study to answer the question: what are the perceptions of adult patients when accessing telehealth in an urban setting? Analyzing the process by which patients decide to connect with their providers is essential if telehealth utilization will increase.

CHAPTER 3: METHODOLOGY

Study Design

A qualitative grounded theory (GT) design was the method used to examine perceptions of urban patients and their decisions about scheduling primary care appointments when telehealth options are available. GT is "concerned with psychosocial processes of behavior and seeks to identify and explain how and why people behave in certain ways, and similar and different contexts" (Foley & Timonen, 2015). The data collection method for this study was individual interviews using semi-structured questions (see Appendix B). The constant comparative analysis of each interview was evaluated according to the grounded theory method as described by Glaser (1978). By describing the process patients use to manage their appointments, the discovered process can become the basis for supporting existing telehealth programs and developing new applications for ambulatory patients.

Because no prior data on this topic was found, the initial purpose for this GT study was to determine core variables and possibly describe the basic social process underlying the experience of urban patients accessing telehealth. With few theories to explain or predict when patients will select telehealth, the GT approach is especially supportive of answering the study question. GT research does not verify existing theory but rather generates new theory from data. Listening to the experiences of the participants, with their own descriptions of their behaviors connecting with their nurse practitioners and physicians, similarities are noted as common categories.

Although telehealth is the primary focus of the study, the intent of GT is to allow patient perceptions of the phenomenon to emerge from their replies. The initial interview questions were intentionally broad without mentioning telehealth

to eliminate a biased response; it was designed to allow categories to emerge according to the discovery mode of GT. However, GT methodology also allows focused follow-up questions to be used during the interview according to topics introduced by participants. Consistent with the symbolic interactionism framework, participants shared what was most significant to them: knowledge about their health, behaviors for connecting and interacting with their physicians, and values of central importance driving the need to resolve their main concern.

Sample Characteristics

Participants were recruited as a convenience sample from adult patients between the ages of 18 and 64 years old who were seeking face-to-face (F2F) appointments with their primary care provider. All reasons for visits and diagnoses were accepted, excluding pregnant and nursing women or patients who were unable to provide informed consent. As a convenience sample, there was no attempt to enroll patients who were representative of the social demographics of the medical group or of Orange County, California. A heterogenous sample of participants was sought without regard to their experience with telehealth because one of the outcomes desired was to learn about patient perceptions and their decision-making process whether they had ever used telehealth or not.

Permission to recruit patients and collect data was initially approved by the Caduceus Board of Directors, then reviewed and approved by the California State University Fresno School of Nursing Research Committee, meeting criteria for minimal risk IRB review with informed consent. Patients who agreed to participate in the research received individual instruction about the study from the primary researcher and provided written consent (see Appendix A). Confidentiality and privacy of personal health information was maintained by

assigning a number to each participant, which was used in all transcription and data analysis phases. The digital recordings of each interview were uploaded onto a HIPAA-compliant cloud-based server and password secured, then permanently deleted from the digital recording device after de-identified transcriptions had been created.

Recruitment strategies for soliciting participants from the Caduceus Medical Group included:

1. providing preliminary information about the study with the medical group staff, noting the eligibility criteria of patients between 18-65 years of age in the family medicine primary care offices,

2. providing and maintaining recruitment flyers about the study placed at the reception and check out desks in the medical office during the period of data collection, and

3. joining with staff during the rooming process to invite patients to participate while waiting to see their provider.

A convenience sample of 26 interviews was obtained initially. There were 21 usable interviews meeting inclusion criteria. Redundancy of information, or saturation of the dataset, was suspected after the 12th interview and achieved after the 15th interview. An additional six interviews were obtained for confirmation of saturation. Excluded interviews included one new patient who had not yet received onboarding orientation to telehealth options offered by the medical group and four patients who were 67 to 79 years old thus exceeding the age criteria.

Demographic data on each participant were obtained from the electronic healthcare record. Variables collected included age, gender, race, ethnicity, employment status, marital status, and residential ZIP Code. Demographic data were input into IBM SPSS Statistics 24 for analysis of frequencies and descriptive

statistics. For the 21 included participants, the age range was 23 to 65 with a mean of 50.1 years. Participants under 50 years accounted for 25% of the patients, between 50–59 years for 55%, and between 60-65 for 20% of the interviewees. Gender was evenly divided with 11 female and 10 male. Race for participants was predominantly Caucasian/white at 80%, with Other at 15%, and African-American at 5%. Non-Hispanic ethnicity was identified for 95% of the participants. Employed participants accounted for 65% of the interviews. Marital status was identified by 75% of the participants with 40% married, 30% single, and 5% divorced. Various crosstab queries for chi-square tests were run but no significance was identified due to the small size of the sample.

Setting

The setting for this study was the Caduceus Medical Group in Orange County, California. Participants recruited were primarily residents of Orange County, California. According to the 2010 census, the population of Orange County is the third largest county in the California, with 72.6% white and 30.4 % foreign-born residents. The median income in 2018 was $78,145 with 11.1% of the residents living in poverty (Orange County, 2018). These statistics highlight how this study is unique in the literature for examining patients in an affluent urban setting whose community would be considered privileged by most standards of social determinants of health.

Caduceus Medical Group is a community-based multi-specialty group practice and management services company providing both primary care and specialty care (Caduceus Medical Group, 2018b). For more than 20 years, the Caduceus Medical group has been owned by its doctors and is unique in its independence from health plans or hospitals. This has allowed them to provide

guaranteed access to care as a cornerstone of their philosophy. This is accomplished by offering standard medical office visits as well as online personalized services using telehealth. They also take pride on their strong reputation for accessibility, declaring within their mission statement the commitment to see a patient on the same day even without an appointment. The medical group accepts all insurance as well as no insurance. Direct patient services are provided by 12 physicians in primary care and specialties and 12 family practice nurse practitioners. Nurse practitioners play a major role in patient care, providing pediatric, adult, and geriatric care, and all prenatal care. Allied health services are also offered, such as physical therapy, diagnostic imaging, and laboratory testing, with special programs for employment and school sports.

Caduceus Medical Group has four medical offices and one urgent care location in cities throughout Orange County, from Yorba Linda in the north of the county to Laguna Beach in the south. Most Caduceus patients live geographically close to one of the medical office sites. However, some patients experience traffic issues because they have moved to or work in a neighboring county which impedes timely access of their doctors and nurse practitioners. This traffic barrier to access for the urban patient parallels the distance barrier encountered by the rural patient. Public transportation is not a solution because it is often slower than driving, requiring multiple transfers.

Considering the distances and time needed to travel in Orange County for medical care during busy schedules, the physicians and nurse practitioners of the Caduceus Medical Group have been offering some manner of telehealth services since 2011 as a cost-effective means for improving access for their patients. Additionally, the board of directors has a vision for providing telehealth as a tool to improve health outcomes and improve patient satisfaction (M. DeNicola,

personal communication, April 4, 2018). Kilbridge, Hood, & Levinthal (2014) note that technology modalities range in complexity of which the Caduceus Medical Group provides the first three:

- lowest (email, texting),
- low (data exchange chart/lab review, data sharing),
- moderate (telepresence video visits),
- high (remote monitoring), and
- highest (real-time interventions such as telesurgery).

The telehealth onboarding process for all patients occurs at the time of check-in during their first appointment. Patients complete standard first visit questionnaires using a provided iPad, then read and sign payment and privacy forms. The iPad process also guides patients through activating their patient portal account and provides information on how to download and use the Caduceus Physicians Medical Group app on a personal computer, Apple or Android smart phone, or other personal device. Instructions for using the telehealth options, with step-by-step instructions, are also available as flyers in all locations at both check-in and checkout desks and are also available 24/7 on the Caduceus website.

Data Collection Method

Data from study participants were collected over a two-week period during standard office hours between December 20, 2018 and January 3, 2019. Interviews were collected on site at the satellite office in Laguna Beach, CA and at the main offices in Yorba Linda, CA. Interviews were obtained in private while patients waited to see their physician or nurse practitioner during an office visit. Interviews ranged from 15 to 35 minutes in length. A semi-structured interview guide developed with input from the physicians and the literature was used at each

interview. Data were collected by the researcher during individual interviews by attentive listening with minimal notetaking. Immediately upon conclusion of the interview, a summary recording of each interview was created from notes and memory. Summary recordings were uploaded to and transcribed using N-VIVO Transcription (N-VIVO, 2018). Transcriptions were verified against the recordings and edited for accuracy as needed (Bailey, 2008). The transcriptions became the primary source of data analysis. No assistants or support staff training was required by or involved in the collection or processing of data recordings or transcriptions.

Data Analysis

The methodology for data analysis was the constant comparative analysis of the transcribed interview summaries using open, thematic, and selective coding. All transcripts were initially printed and bound together to facilitate first-pass initial coding. As each successive transcript was analyzed, emerging themes were compared with the previously coded interviews. Ideas and themes were grouped into categories representing the researcher's thematic syntheses using Banning's "ecological sentence synthesis" (ESS) approach to writing thematic sentences (Sandelowski & Lehman, 2012). With an ESS approach, individual themes are converted into prepositional phrases in English, which are then linked together in a single sentence that describes the emerging categories. The ESS as used in this study captured complete statements from all interviews in a digital manner that became the basis of highly detailed analysis. The ESS data were entered into MS Excel 365 where analysis was accomplished using the pivot table functionality, then imported into MS Access 365 for further generation of thematic statements using the data query and reporting utilities of the software. The ESS sentences

served as a basis for writing the thematic statements. As Sandelowski (2012) stated: "the sentences function to capture complete ideas that can then be reduced to a comprehensive and highly structured but also parsimonious rendering of findings" (p.408). The example shown in Table 1 is an abbreviated version of data from this study using the ESS structure.

Table 1

Abbreviated ecological sentence synthesis (ESS) for thematic analysis

Participant	Of this age	Of this gender	Accessing Caduceus online options via	With this typical use of the patient portal	Made this kind of appointment today	With this perceived urgency
Person 1	22	M	Phone app	Messaging Mouse Calls	Same day via phone system	Urgent
Person 2	49	F	Webpage. Also used PDQ app on phone	Appt scheduling Review of labs	Web appt for same day	Urgent

Note. Adapted from Banning in Sandelowski & Leeman (2012).

When doing GT data analysis, emergent codes are noted as categories starting with the very first interview. These initial categories are looked for in the next interview and repeated with each successive interview. This is the iterative nature of intra-coding within an interview and inter-coding between interviews, thus allowing concepts of a basic social process to emerge from the data (Giske & Artinian, 2007). Categories identified from interviews can then be understood according to underlying patterns that develop. When all the categories fit together, an overarching phenomenon emerges. These steps generated concepts pertinent to this study that led to a conceptual and saturated description of the phenomenon.

Because there was no intervention in this descriptive level qualitative study, there could be no internal validity for the data. However, the core variable in qualitative interviews is the one that "occurs frequently, links all the data together, and describes … pattern[s] as followed [by the subjects]" (Powers, 2015. p. 144). This makes qualitative research trustworthy. Trustworthiness develops from hearing enough stories that the pattern can be predicted. It is said that the data set is saturated when no new findings appear.

Open coding produced 31 categories. Relationship patterns were noted and conceptual mapping was used to further refine and sort the data into primary and secondary categories. Memos were created to document the constant comparative analysis of the interviews and ESS. Ultimately, a basic social process of *weighing options* emerged from the data. The data produced the key factors and contexts for knowing this phenomenon. Data analysis and comparison continued until all categories were saturated.

CHAPTER 4: RESULTS

Weighing Options

No computer can replace the personal touch. I am concerned that devices are decreasing interactions with people and I do not want that to happen to me. (57-year old male)

The portal is the bomb! I love using the patient portal. It has a brilliant design. Reminds me of healthcare when I lived in France. (63 year-old female)

I prefer to see people face to face, I like to see the full body language of the person I'm talking to- I like face to face in general. I'm too old to use the computer. I'm in the older generation. (32-year old male)

Mouse calls are a genius idea! I love them! I use them when traveling for distant prescription refills - convenient beyond belief! (28 year-old female)

Patients of the Caduceus Medical Group have telehealth options for connecting with their physicians and nurse practitioners, yet overwhelmingly prefer in-person office visits over telehealth. Like so many other patients across the country, they are not embracing telehealth for visits with their physicians and nurse practitioners and when they do use telehealth, it is most often at the lowest complexity category of messaging (Kilbridge et al., 2014). Figure 1 shows that study participants who were aware of telehealth options were more likely to adopt the modalities with the lowest technical complexity.
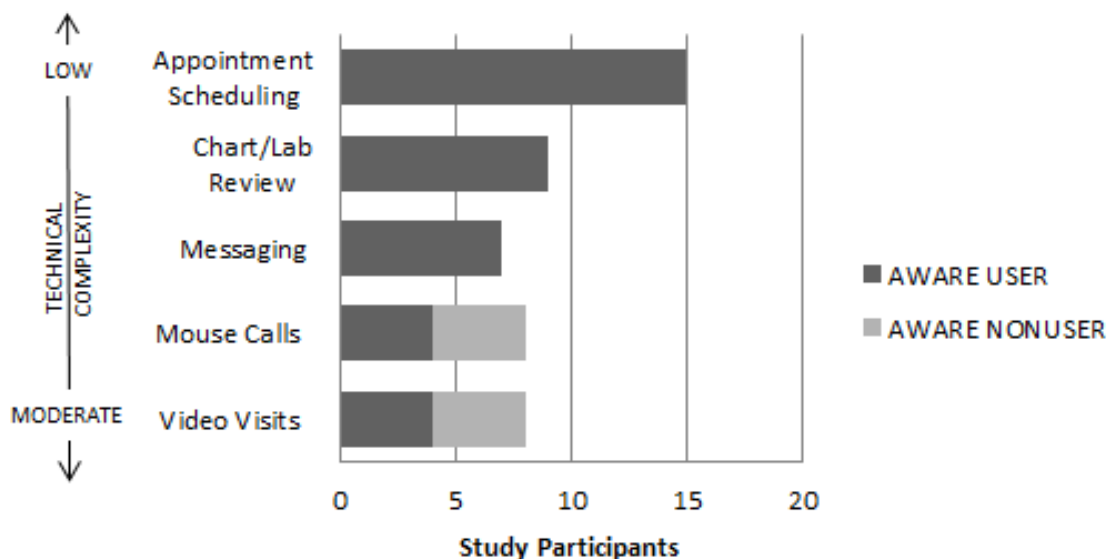
Figure 1. Awareness and usage by telehealth modality and complexity for study participants.

Patients in any ambulatory setting are confronted with the same decisions about seeking healthcare whether in a rural area or urban area. What is the process by which patients choose to connect with their provider in an office visit or telehealth visit? Three stages for seeking care emerged from the data. In the first stage, the patient decides that the main health concern in the moment requires consultation with a provider. Once the decision is made, the patient proceeds to the second stage where the urgency of the need is considered. The patient weighs options on how to connect with that provider. The options or factors of the current context are weighed against past experiences at the doctor's office, factors of calendar and time logistics are weighed against convenience, and factors of technology are weighed against skills, devices, and privacy concerns. After weighing the factors, the patient selects either an in-person visit or telehealth visit to resolve the main concern. The third stage ends the process when the patient connects with the provider.

Two major factors were identified that influenced the process: the contextual factors and the personal factors. The contextual factors covered such concerns as the reason for visit, the perceived sense of urgency, or a perceived need for a physical exam. The personal factors identified concerns based on the relationship the patient enjoyed with the provider, the transpersonal engagement during the visit, and feeling cared for. Two additional variable factors included one that was somewhat negotiable, named by one patient as *hassle factors* (HFs), with the second variable concerning technology factors.

In analyzing the responses related to personal reasons for using or not using telehealth options, three questions were identified: What knowledge do patients have about the options? What were the attitudes or values of patients about using the options? What behaviors were patients willing to engage in to exercise their options? These personal factors were grouped together and analyzed according to the categories of knowledge, values, and behaviors as reflected in the intersystem model (Artinian, 1997). These concerns are similar to those identified in the seminal work of Kuhn (1974) whose aim was to identify propositions about social behavior that would be common to all the social sciences. He wrote: "For intersystem analysis, the model proposes that any controlled adaptive system including the human being, must utilize information, preferences or values, and behavioral responses" (p. 9).

Weighing Hassle Factors

Factors that could be both convenient or a nuisance and present or absent in the context of the current main concern were termed *hassle factors*. Patients identified HFs to include distance from the office and the convenience of getting there, as well as experiences with the phone system and the staff: "Driving the

distance is worth it to be seen by these wonderful doctors and nurse practitioners".
More than one patient identified that they only present themselves on a same-day
walk-in because they detest calling or using the online app to schedule an
appointment: "I live within walking distance. It's just as easy to walk over and
they always accommodate me. I never call." Another patient commented that "the
convenience and location make it not so important or even pertinent to have a
virtual visit." One patient dropped in to the office to schedule appointments ahead
of time rather than using the phone system: "I have spent hours leaving unreturned
messages so now because I work close by, I just drop in and schedule the
appointment across the desk". A different patient had completed the transition to
the online appointment scheduling saying, "I never use the phone system anymore.
I handle all of my communication needs through the phone app." Initially, HFs
were understood to be those of logistical concerns. Later analysis revealed that all
factors taken under consideration by the patient constituted HFs of one kind or
another.

Weighing Contextual Factors

Contextual factors were related to the main concern (reason for visit) of the
current appointment and the sense of perceived urgency. Reasons varied from
routine scheduled appointments, acute minor conditions, and acute emergent
conditions. Sometimes the context originated with Caduceus staff: "My
appointment today was because I got a phone call that I needed to come in and
follow-up on my labs. At the time they called, they scheduled today's
appointment." Another context was that it was time for an annual physical:
"Today's appointment was to schedule my mammogram, but I was told I needed a
well woman checkup first. I guess my insurance changed the requirements on that.

I should probably do this anyway now that I'm 50 years old." For patients seeking same-day appointments, the context was often an acute condition such as a worsening respiratory infection: "I'm having some sinus issues and I'm going to be traveling starting tomorrow for the holidays." Occasionally there were emergent conditions such as when a specialist referred the patient to be seen by the Caduceus providers on the same day: "My blood pressure was so high at my ENT's office today that they called Caduceus and got an appointment for me. I've never had problems with that before. But I'm being more responsible now with my healthcare."

Weighing Interpersonal Factors

Interpersonal factors were noted, even emphasized, by every single participant. Interpersonal factors were the most frequently coded category. During initial coding, since interpersonal factors were not directly related to technology, I discounted these statements. With iterative constant comparison and recalling Glaser's dictum that "all is data" (2007), during early thematic analysis, interpersonal factors emerged as the most significant factor of this process; every participant commented on the caring: "The care is absolutely wonderful here. I like their philosophy of healthcare and how nice people are. Little things make me feel I'm important and my concerns are important." The caring touch was often stated: "I prefer coming here in person because I like the personal touch" and "When I'm sick, I want the personal touch, the personal face-to-face." Some of these interpersonal factors were identified as continuity of care: "I like coming here. There's continuity of care here. I like seeing and talking to people. They talk to me and they know me." Friendly personalized care was another component of interpersonal factors: "This practice is so friendly and accommodating; I just love

this office. The people are what make it so good." For a patient who had surgery, she described the extra caring steps by her surgeon saying, "It's personalized service when the surgeon gives you her personal cell phone number postop. That alone helped me feel not anxious to go home. I adore my doctor. I love the staff overall".

Many subjects were unaware altogether of the readily available telehealth modalities, some were aware but partial users, and a few were complete nonusers. Yet when asked, most participants indicated a desire to know more about how to use the telehealth options. For example, when one patient was asked if he used the phone app, he immediately pulled out his iPhone, logged onto the Apple Store, and downloaded the Caduceus app, exclaiming, "No way! This is so cool!"

Weighing Technological Factors

Technological factors reflected both patient-owned hardware, software as provided through the Caduceus website or in the app store, online privacy and security concerns, and telehealth modalities. All but a few participants identified themselves as competent users of either a laptop or computer, personal device such as an iPad, or smart phone. One participant was adamant stating the reasons he would never use telehealth even though he was a highly competent and skilled user:

> I can't think I'd ever embrace telehealth. Other than owning a smart phone I own no other technology anymore. I use the library computer as needed. I am most concerned with electronic healthcare records security and privacy. I can't avoid having an electronic chart, but I do not want to add additional nodes to my chart.

In contrast, another patient stated, "I access the webpage via my phone all the time. I'm a heavy user of both messaging my doctors and using mouse calls. It's especially convenient when I'm out of town." Some patients had started to use telehealth options but had not continued after their initial experience: "I know I set up my access to the portal years ago. But I forgot my password and it's too much trouble to reset. Now if they could add facial recognition, I would use it all the time." For those who did access the telehealth options, their responses were summed up by the patient who said, "Having these options to reach my doctor are a godsend".

Discovery of the Basic Social Process: Weighing Options

Upon initial analysis of the data, and review of the emergent codes, I was particularly interested to notice how aware patients were of their options. Since access to all the telehealth modalities are dependent upon their use of the Caduceus patient portal through the app or webpage, patients were identified according to those who were active portal users, on the portal but not using it, and no access created. Furthermore, in terms of awareness for the modalities available to them, there were fully aware full users, fully aware partial users, partially aware partial users, and unaware nonusers. For the telehealth options offered by Caduceus, the most commonly reported use was also in the lowest technical complexity task of messaging with scheduling appointments online used the most frequently, followed by using the provided email or messaging utilities. The next areas of awareness and use were in the slightly more complex tasks of data exchange where subjects evenly reported using online prescription refills, chart review, and lab review. For telepresence, the most complex task, one-third of the

patients interviewed were using mouse calls yet only two patients were aware of virtual visits and only one had attempted a virtual visit.

Using the grounded theory techniques of coding and memoing, I was alerted to the concept of the HF for scheduling appointments by a patient who said, "Even though it was a hassle to take the train, that was a hassle I was willing to put up with". This led to a memo noting that this concept was important in the decision-making process of how patients decided to use telehealth. This descriptive mode analysis led to a broad, early equation that encompassed all the factors. The hassle factor (HF) equation stated that the hassle factors had to be greater than the desire and preference for a face-to-face office visit (F2FOV) in order to select a telehealth option (see Figure 2).

$$HF > F2FOV = Telehealth$$

Figure 2. Hassle factor equation.

It was recognized that the process driving the use of telehealth was one of decision-making, sometimes an unconscious process following some internal heuristic pattern. Because the importance of the interpersonal relationship with the provider was so strongly identified by every subject, there was an intermediary stage of analysis that considered maintaining the transpersonal relationship as being the deciding factor in how the contact should take place. Further analysis led to the final identification of the three stages when a decision is made to seek care. The beginning stage was identified as the moment when a decision is made to seek optimal care for the current healthcare need, followed by weighing the options with several sub stages, and concluding with the endpoint stage of connecting with the physician or nurse practitioner.

The patient's main concern emerged from the data: "For today's particular medical need, how can I obtain optimal care in the moment?" Continued data analysis led to the discovery of the basic social process of the theory of weighing options (see Figure 3). Conceptualized as a set of balance scales, the basic social process first proceeds through the urgency factor at the base of the fulcrum. The sides of the fulcrum in the weighing process represent considerations for what they know, what they value, and what behaviors have worked in the past for seeking care. The balance bar at the top of the fulcrum is the cluster of hassle factors (HFs) starting with timing, relationships, distance, and convenience, followed by technological skills and devices and privacy and security concerns. If all factors are favorable and the perception that no direct physical relationship is needed, then the options are weighted in favor of telehealth and telehealth is chosen. If HFs are overwhelming or the perception that a physical relationship encounter is desired, then an in-person office visit will be scheduled. If all HFs are equal and in balance, then the type of visit may be chosen based on the relationship experience they desire in the moment (see Figure 3).
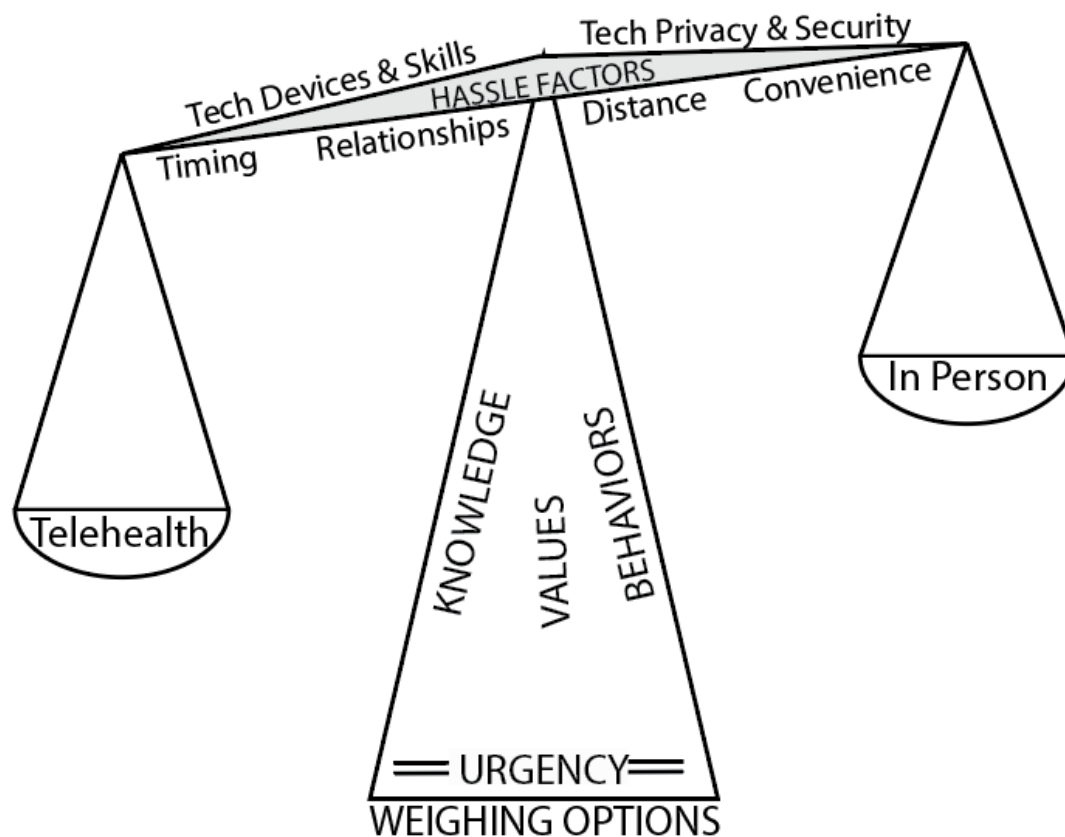
Figure 3. Theory of weighing options. Copyright 2019 by Katharine West.
The model shows the process of resolving the main concern of seeking optimal
health care in the current moment and context. The starting point is the moment
the patient decides to seek care, leading to the process of weighing options, with
the endpoint of connecting with the provider. The process starts with determining
the urgency of the main concern, then filtering the need through the personal
history of known factors (knowledge), what is important (values), and what has
worked in the past or what one is willing to do in the current context (behaviors).
Next, the patient proceeds with balancing pertinent hassle factors (HFs) of timing
(scheduling), transpersonal relationships, distance, and convenience of the current
context, and including a consideration of technology devices and skills and
confidence in technology privacy and security. If HFs are favorable and the
perception that no direct physical relationship is needed, then the options are
weighted in favor of telehealth and telehealth is chosen. If HFs are overwhelming
or the perception that a physical relationship encounter is desired, then an in-
person office visit will be scheduled. If all HFs are equal and in balance, then the
type of visit will likely be chosen based on the transpersonal experience they
desire in the moment.

CHAPTER 5: CONCLUSIONS

This study originally proposed to simply give voice to the perceptions of urban patients in an ambulatory setting regarding their use of telehealth. The historical development of telehealth has been well studied in terms of technology development and infrastructure deployment (technology-centric research). As telehealth matured, studies demonstrated its usefulness to providers in the delivery of care to underserved patients in rural and remote areas (provider-centric research). Telehealth also stimulated new legal definitions and redesign of licensure and reimbursement (regulatory-centric research). Studies categorized as patient-centric addressed external factors such as outcomes of treatment or utility or convenience, but little is known about internal motivations of patients for selecting telehealth without going into collateral fields outside of healthcare.

As technology became more affordable, access to and adoption of technology by individuals seemed universal throughout society except for telehealth. The healthcare industry has been baffled that telehealth availability has not translated into equivalent telehealth utilization. The purpose of this study was to gain understanding into this conundrum, to learn from patients themselves about perceptions and the decision-making process for seeking care when telehealth options are available. Because the grounded theory approach allows a process to emerge from interview data, it was possible to gain an understanding of patient perceptions and the theory of weighing options was discovered. Weighing options explains the basic social process patients follow when deciding how to connect with their physicians and nurse practitioners.

Discussion

This study confirmed that patients are very deliberate about seeking healthcare, weighing the options anew each time a healthcare concern exceeds their own ability to manage it themselves. The theory of weighing options describes the process when patients determine the urgency of their need, filter the current need through their memory of previous healthcare encounters, and weigh various options such as scheduling or traffic, the "hassle factors", before arriving at a decision to pursue a telehealth encounter or not. The process concludes when the connection is made with the provider. Discovering the weighing options theory provided insight to each of the study questions.

For the first question, "How did patients select any type of appointment to seek care?", weighing options explains the process for selecting telehealth or in person appointments according to the need of the moment. The participants made clear that this process starts anew for each ambulatory encounter. Selecting telehealth for the same condition a month ago did not guarantee that telehealth would be selected for the same condition in the future. With each successive encounter, the patient notes that experience within a personal historical memory from which the patient draws information to inform the process the next time care is needed.

For the second question, "How did patients perceive and use available telehealth options?", one remarkable finding was the great fondness of the study participants for the doctors and nurse practitioners within the Caduceus Medical Group. Every participant stated in one way or another that coming to the office in person met a transpersonal relationship need that they were only willing to give up for telehealth if other hassle factors were overwhelming. One reason that rural studies show patient satisfaction with telehealth could be explained by weighing

options, because the hassle factor of traveling long distances far outweighed the relationship need. However, on subsequent review of the rural studies specifically looking for interpersonal concerns, it was noted that in the reviewed studies, patients were connecting from the rural office of their primary care provider to the distant specialist and not using personal devices. In this case, the transpersonal relationship with the primary care doctor remains intact on the patient side of the telehealth encounter; the rural patient did not give up the personal touch to benefit from a telehealth encounter. The affective or emotional experience of the healthcare consumer in the moment seems to play a role in whatever form of engagement is selected according to the research on access or studies on uses and gratification of technology. Finally, awareness and technological complexity of telehealth modalities appear to influence adoption and use. Familiarity with telehealth should result in more favorable perceptions with increased adoption and use over time. For the most part, when unaware study participants were informed of available telehealth options at the end of the study, their perceptions were positive.

The final question of this study, "Under what circumstances might telehealth be useful in the future?", was answered when participants identified certain hassle factors such as traffic or late-night convenience as reasons to use telehealth going forward. As experience with telehealth increases, and providers guide patients in the types of circumstances appropriate for telehealth, completing the weighing options process should result in a telehealth encounter. One participant who has a consulting business with independent living facilities for seniors suggested at the end of her interview that telehealth could be very useful for seniors of all ages. She shared her experience that seniors of all ages are online, at least with an iPad. She thought seniors who no longer drive would

embrace telehealth with enthusiasm. What she described was the specific hassle factor tipping the scales in favor of telehealth for nondriving seniors.

Implications for Nursing Practice

The nurse's role in supporting telehealth continues to increase in breadth and scope as innovative applications of technology expand the field of telehealth. The Nursing Organization Telehealth Committee sponsored by the American Nurses Association facilitates multispecialty groups involved in telehealth nursing practice. The American Academy of Ambulatory Care Nursing (AAACN) took the lead in 1997 with the publication of the first Telehealth Nursing Practice Administration and Practice Standards with regularly revised versions (AAACN, 2018).

Changes in nursing practice regarding telehealth have already taken place with implementation for home health nursing with remote monitoring, chronic care case management, and support of family caregivers (Souza-Junior, Mendes, Mazzo, & Godoy, 2016; California Board of Registered Nursing, 2011). Proposed solutions for advanced practice nurses have been more provider-centric and include participation in technology design, selection, and implementation, with professional concerns regarding interstate licensure, malpractice, telephone triage, and telehealth reimbursement (Schlachta-Fairchild, Varghese, Deickman, & Castelli, 2010).

Although nurses were not interviewed in this study, participant comments indicated that there is ample opportunity for supportive nursing actions in the office perhaps as simple as helping a patient download the clinic app onto their own smart phone. Many of the participants at first seemed completely unaware of the telehealth options available to them even though there are telehealth brochures

displayed on every check-in and checkout counter in every office and links are available on every webpage on the website. However, when prompted with one of the telehealth brochures, they did recall the option. Somehow over time their awareness diminished. Patients can only weigh options they know about, know how to use, and feel they would be of benefit. Given that every participant made a comment on the positive relationships enjoyed with staff, one of the major challenges for nurses and all healthcare providers is how to maintain patient-centric caring and support when physical proximity to patients becomes virtual. Competency levels have been proposed for nurses to learn a new communication process for digital media with an understanding of how interpersonal communication changes in the presence of technology (Fathi, Modin, & Scott, 2019; de Almeida Barbosa & Paes da Silva, 2017). Patients still need a nurse when using telehealth, perhaps one who expresses even more TLC than when in person. The following recommendations for nursing support with telehealth emerged from the data. Telehealth competent nurses will:

1. Describe the potential for benefit of telehealth to their patients (increase awareness).
2. Demonstrate proficiency with the specific telehealth applications offered to patients in their practice domain.
3. Connect with patients using digital communication competencies in all virtual interactions.
4. Assess each patient's knowledge, values and preferences, and behaviors and abilities with technology and offer individualized guidance.

Limitations of the Project

One limitation of the project was the setting at a physician-owned medical practice in an affluent urban setting. A second limitation was the small sample size. Participants were recruited by convenience sampling at only two of the five office locations for the medical group. Participants may not have been representative of either the full client population of the Caduceus Medical Group or Orange County residents. Therefore, the setting and participants of this study may not be generalizable to other types of medical practices or populations, whether urban or rural, in this country or other countries. A third limitation may have been a result of possible recall bias of the participants for recalling past motivations and of the researcher when recording the interview summary immediately following the interview.

Conclusion

At the end of this project, the physicians and nurse practitioners of the Caduceus Medical Group gained an understanding of their patients' perceptions of access using telehealth, including when and why particular modalities of telehealth might be selected. When presented with the findings, the CEO/CMO stated "now I know exactly what I need to do to help our patients use our telehealth services" (personal communication, G. DeNicola, MD, March 11, 2019). With the information from this study, the Caduceus Medical Group intends to proceed with developing a patient awareness campaign for the types of telehealth that are available for their patients, retrain staff in their supporting role, and streamline the technology design.

The results suggest future research with an evidence-based practice project for discerning best practices for onboarding patients to telehealth. Another area of research could identify how periodic educational reinforcement impacts both

patient usage and staff support of telehealth. Each individual hassle factor could be studied, such as evaluating cost-benefit outcomes comparing chronological travel distance instead of geographical distance. Other areas of research might address how the consumer brand experience from marketing applies to telehealth (Lee et al., 2019). What elements of the consumer brand experiential modules from marketing are pertinent to telehealth patient engagement? Is it the lack of healthcare incorporating concepts known in retail marketing to improve consumer engagement that is behind the reluctance of patients to use telehealth? Finally, research could evaluate how ambulatory nurses could combine caring and support in virtual interventions. Ultimately, nurses play an important role in helping patients resolve hassle factors when weighing options for obtaining the best care in the moment, because sometimes, the best care will be telehealth.

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APPENDICES

APPENDIX A: SUBJECT'S CONSENT

Subject's Consent

1. I understand that the primary researcher of this study is Katharine West, RN, who is a doctoral student at the Northern Consortium at California State University Fresno, and that the purpose of this study is to help the Caduceus Medical Group in La Habra, California understand more about how patients access their health care providers.
2. I understand that the results of this interview will be used for a university research study. Anonymous results may be shared with the Caduceus Medical Group for planning patient care services in Orange County. I may request a copy of the final report from the researcher.
3. I acknowledge that I am willingly participating in this interview of the experiences of patients receiving health care services at the Caduceus Medical Group. I understand that the interview will be recorded, and I may withdraw from this study at any time without negative effects or ill will, or negative impact to my relationship with my providers.
4. I have been informed that this study only involves the researcher interviewing me individually or in a small focus group about my own experience accessing health care services at the Caduceus Medical Group. The interview is expected to take about an hour to complete. I have been informed of my right to not answer any question asked by the researcher and that I leave the focus group at any time.
5. I permit the use of information I have provided. I may also request that my answers not be used in analysis. Only the researcher will have access to my name and pseudonym which will be kept in an online database that meets HIPAA-security on a password-protected server.
6. I understand that there may be no direct benefit to myself by participating in this study, but that the information gained from the study may serve to improve and expand health care services for my community.
7. If I have any questions about my rights as a study subject, I may contact the researcher, Katharine West, or her professor, Dr. Constance Hill, through the Valley Foundation School of Nursing, San Jose State University, at (408) 924-3159.
8. I have read the above "Subject's Consent". The nature, demands, risks, and benefits of the project have been explained to me. I understand that I may ask questions and that I am free to withdraw from the project at any time without incurring ill will (or affecting my medical care). I also understand that this consent form will be filed in an area designated by the Institutional Review Board with access restricted to the principal investigator or authorized representative of the Valley Foundation School of Nursing. A copy of this consent form will be given to me.

Subject's Signature	Date

Witness	Date

APPENDIX B: STUDY INTRODUCTION SCRIPT

Study Introduction Script

Thank you for helping with my study of the experiences of patients at the Caduceus Medical Group. I am a doctoral nursing student at California State University at Fresno. I am interested in learning more about how patients access health care.

Your answers will remain strictly confidential. The recorded interview will be typed using your selected pseudonym to identify you. The digital recording will be kept secure in a HIPAA-compliant password protected computer drive. The pseudonyms will be kept strictly confidential. The general results of the study may be shared for future planning for health care services at the Caduceus Medical Group. I will take all necessary precautions to ensure that your personal answers remain anonymous. I am interested in your experiences and your opinions. Please feel free to share anything that is important to you at any time during the focus group. Also, you may choose to skip any question you are not comfortable answering. Do you have any questions before we begin?

Interview Guide: ACCESSING HEALTH CARE

1. What is it like being a patient at the Caduceus Medical Group?

2. Tell me about your health care visits.

3. How do you think your experience of being a patient at Caduceus differs from patients in other health care systems?

4. If you had the power to change anything about your health care as you are experiencing it living here in Orange County, what would you change?

5. Is there anything else you would like to add?

Thank you very much for your answers. They will be most helpful as we plan future service in s for the patients of the Caduceus Medical Group. If you think of anything else you would like to share with me, please leave a message for me with the receptionist at Caduceus and I will call you back. Thank you again.