Title
Patient Satisfaction in Telehealth in Annual Wellness Evaluations

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Publication Date
2022

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Patient Satisfaction in Telehealth in Annual Wellness Evaluations

A dissertation submitted in partial satisfaction of the

requirements for the degree

Doctor of Nursing Practice

by

Heydi Manrique-Aparicio

2022

ABSTRACT OF THE DISSERTATION

Patient Satisfaction in Telehealth Annual Wellness Evaluations

by

Heydi Manrique-Aparicio

Doctor of Nursing Practice

University of California, Los Angeles, 2022

Professor Felicia Hodge, Chair

Background: In 2016, the United States spent approximately 730 billion dollars treating preventable disease. Annual Wellness Evaluations (AWE's) are an opportunity for providers to identify individualized risks and in this way reduce unnecessary costs and improve their patient's health. Recent studies presented high levels of patient satisfaction with telehealth. Offering AWEs through telehealth could increase utilization of this important health evaluation.

Objectives: To evaluate patient satisfaction using the Consumer Assessment of Healthcare Providers Survey (CAHPS) with telehealth in AWE's and compare the results to patients who participate within in-office consults, and other small practices across the United States. To understand if telehealth is a viable method of improving access to healthcare for preventive

health. **Methods:** Two groups (telehealth and in-office) in Orange County, California were screened for telehealth readiness. Both groups received 40-minute AWE's evaluations, a diet consult, a 20-minute follow-up over the course of a month and were alternately entered into each group. The Consumer Assessment of Healthcare Providers Survey (CAHPS) 3.0 was offered after the follow-up consult. **Results:** Out of five observations four responded in the in-office group and 80% reported 10/10 satisfaction on CAHPS 3.0. For five observations in the telehealth group reported 80% evaluated their providers with a 10/10 satisfaction score). **Conclusion:** Participants in the telehealth group reported higher levels of satisfaction when compared to in-office healthcare settings according to the national results of the CAHPS (72%) and compared to the same office in-person group. The project will continue until 102 participants are entered.

The dissertation of Heydi Manrique-Aparicio is approved.

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Wendie Robbins

Elizabeth Thomas

Felicia Hodge, Committee Chair

University of California, Los Angeles

2022

This dissertation is dedicated to my husband Alejandro for his love and patience, and to my beautiful boys, Jaiden, Kaleb and Eli, who have given so much joy through this process.

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ACKNOWLEDGEMENTS

I would like to acknowledge all of my professors at the UCLA School of Nursing and in particular the committee members for this project. In this short time, they have imbued me with their desire for excellence and their incredible expertise. I would also like to acknowledge Soo Kwon in the School of Nursing for her kindness and support of not only me but all students and professors a like.

VITA

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CHAPTER ONE: INTRODUCTION

Annual wellness evaluations (AWEs) were introduced in 2011 as a means to improve access to preventive health (Ganguli et al., 2018). In March 2020, the Centers for Medicare and Medicaid Services (CMS) extended authorization to provide care for the COVID-19 pandemic and other medically reasonable telehealth visits (Koonin et al., 2020). Annual wellness evaluations were already underutilized and, prior to the pandemic, access to these services was limited (Ganguli et al. 2018) and providers expanded telehealth consults by 154% to address this gap in care (Koonin et al., 2020). This approval and the ease of reimbursement provided by the CMS authorization may facilitate the use of telehealth for AWEs to support continued efforts to engage patients who may not be ready to meet with their providers in person. The purpose of this project was to identify and assess if AWEs via telehealth are suitable and satisfactory for patients at a small clinic in Orange County, California.

Problem Statement and Background

The United States (U.S.) spends about 16% of its gross domestic product (GDP) on healthcare and more than a quarter of that goes toward the treatment of preventable diseases. These statistics add up to about $730.4 billion dollars annually spent on preventable conditions (Galea & Maani, 2020). A re-focus on preventive health and risk assessment has been shown to reduce this large sum (Beckam et al., 2018) and possibly create opportunities for reinvestment in other national priorities. AWEs are an opportunity to engage with patients and set mutual goals for the year.

Annual wellness evaluations are used to develop personalized plans to prevent disease and decrease health risk factors. These visits can be fully covered by insurance if the provider is considered “qualified”; however, a coinsurance may apply. The evaluation includes a detailed

history and an update of the patient medication record (Code of Federal Regulations, 2022). Included in the evaluation is the following: assessment of height, weight, and a screening checklist for preventative services, as recommended by the United States Preventive Task Force (USPSTF). The evaluation should also include an assessment looking for signs of a cognitive impairment. It is designed to be a time for personalized health advice and the preventive services are based on the (USPTF) recommendations. The evaluation can be completed with an associated physical exam, a diet-consult and a follow-up if needed, but these services are not required as a part of the AWE (Code of Federal Regulations, 2022).

A primary goal listed by the Secretary's Advisory Committee Report: Healthy People (2030), is to promote health and well-being and eliminate health disparities. Focusing on preventive care is also a vital piece of the Affordable Care Act (ACA) of 2010. Providers are challenged to find innovative ways to reach the 81 million Americans living in Health Professional Shortage Areas (Jaffe et al., 2020). Telehealth may be one approach to reach more persons for preventive care and has previously demonstrated positive patient experience outcomes in other areas of healthcare (Nourian et al., 2020: Peng et al., 2020).

Providers are also challenged in reducing the number of no-show or missed medical appointments. Telehealth also offers opportunities in addressing non-attendance to medical appointments. A large study by AETNA Health showed that 15% to 30% of patients over the age of 19 either were no shows, rescheduled or cancelled their appointments (AetnaHealth.com, 2022). Patients who miss appointments have poorer health outcomes (Crutchfiled & Kestler, 2017). Another large 2017 study found that 28% of patients canceled or missed their appointments due to transportation problems while an additional 26% missed their appointments because of forgetfulness (Crutchfiled & Kestler, 2017). Telehealth may provide solutions in

these areas and by promoting healthy lifestyles; however, clinicians must first understand if patients and providers are satisfied with telehealth consults to implement such programs.

PICOT Question

The PICOT question for this project is: (P) In patients 18-years and older presenting for annual wellness evaluations, (I) how does the initial telehealth consult (C) compare to the in-person consult (O) when patient satisfaction and patient experience are measured by the Consumer Assessment of Healthcare Providers Survey (CAHPS) 3.0 (T) after 4 weeks from the initial consult?

Purpose and Objectives

This DNP project aims to assess whether patients can be satisfied equally or better with telehealth AWEs when compared to in-office AWEs. Although, as noted below, no studies characterizing patient satisfaction in AWE's have been identified, research in numerous other specialties supports the hypothesis that patients participating in telehealth will likely report similar or higher positive experiences in their annual wellness evaluations compared to patients seen in-office (Aashima & Sharma, 2021). Based on the literature identified, the hypothesis is that patients participating in AWEs will be equally satisfied or more satisfied with telehealth AWEs when compared to in-office AWEs.

CHAPTER TWO: THEORETICAL FRAMEWORK

The theoretical framework utilized for this project is Dorothea Orem's Self-Care Deficit Theory which guides providers to care for patients while assisting with goal-directed care effectively. The Self-Care Deficit Theory (Orem, 1985) is a grand theory founded on the premise that patients want to participate in self-care to maintain health. In order to accomplish this, they must first understand what should be done and then decide what they will do. Applying a holistic

approach, the model focuses upon three levels to guide the provider assessment in a hierarchical order: basic, developmental, and health-related needs. In the first level of basic needs, the provider evaluates a patient's access to food, air, and water, a balance between activities and rest, and prevention of hazards. Providers must then identify developmental needs and, finally, health needs to help patients and caregivers understand and produce a patient-guided care plan (Orem, 1985).

Implementing Orem's self-care theory into practice allows the provider to stratify the patient's healthcare needs and risks in a pyramid format (Orem, 1985.) The operationalization of the Metabolic Code Assessment (MCA) questionnaire will drive the discussion of a more patient-centered experience, and patient-centered care is directly tied to patient satisfaction (Thiedke, 2007). This questionnaire helps the clinician understand the patient's day-to-day health experience and is usually completed in six minutes. The MCA categorizes responses into five domains (energy, resilience, endurance, detoxification, and potency) and prioritizes the higher needs. Utilizing this questionnaire can yield a patient-centered discussion that can have a higher level of satisfaction when achieving personal goals (Thiedke, 2001). Similarly, Orem's self-care goal allows the provider to move through prioritized needs that facilitate the patient's ability to care for themselves and their families. With the provider's support, each patient can assess their risk (Orem, 1985).

CHAPTER THREE: DNP LEADERSHIP AND INTERPROFESSIONAL PRACTICE

This DNP project incorporates many of the DNP Essentials outlined by AACN. The primary focus of this project lies within Essential III, which prescribes that a DNP utilize evidence to support patient care and implementation of innovative therapies and new research by objectively reviewing the patient experience in telehealth (AACN, 2006). This project also

combines two principal purposes for the DNP. Essential IV, which recommends that the DNP-prepared nurse prioritize the implementation of information technology to improve healthcare, and Essential VII, which prescribes that the DNP nurse focuses on clinical prevention by decreasing patient risks to improve health (AACN, 2006). Implementation of Telehealth patient online portals incorporates innovative software technology (Healthie), compliant with the Health Insurance Portability and Accountability Act (HIPAA), to increase access to consults and care for patients who prefer or cannot attend in-person appointments. The expansion of preventive health and annual wellness evaluations supports DNP Essential VII's core by potentially increasing clinical prevention. This project will support the call for health promotion and disease prevention (ODPHP, 2020.) Essential VI is also highlighted in this project, as the practice incorporates a 20-minute diet consult for every patient.

CHAPTER FOUR: REVIEW OF LITERATURE

Literature Search Strategies

A literature search was conducted on the search engines PUBMED and Ovid. A total of 124 articles were found with the MeSh and Boolean terms "Annual wellness evaluation" and "Telehealth or telemedicine" and "Patient satisfaction." Three pertinent articles were selected, and 121 were excluded because of the following: (1) the studies were completed outside the US; (2) studies were related to pregnant or pediatric populations; (3) studies were considered expert opinions; (4) studies were not part of a clinical endeavor; (5) studies were not published in peer-reviewed journals; (6) they were not available for review. Studies that included a "synchronous" telehealth consult were included. Filters used included time limits between 2015 and 2021 and full-text articles. Studies completed outside the United States were excluded. A similar search on Google Scholar using the same search strategy yielded 1200 articles. Studies deemed relevant

and appropriate were within the first 40 articles reviewed in Google Scholar. Studies not specifically addressing patient satisfaction with telehealth were excluded. No literature specifically discussing AWEs was identified in this search. Telehealth delivery remains diverse even within the US; Therefore, studies completed outside the US were excluded to decrease variability. Eleven articles were accepted from this search. Figure 1.

Review of the Literature

A review of the literature reported by Aashima and Sharma (2021) found 1041 studies in the PUBMED online database evaluating patient and provider satisfaction and found 25 pertinent studies between 2020 and 2021. Approximately 48,000 patients and 146 providers expressed their opinions across the specialties via surveys. Between 94% to 99% of the patients interviewed reported satisfaction irrespective of whether the consults were synchronous or asynchronous. Healthcare providers also reported satisfaction with telehealth consultations. All studies where providers were surveyed reported between 75% to 90% provider satisfaction and in six of the seven studies, providers were willing to continue with telemedicine (Aashima & Sharma, 2021). One study in this review found that a smaller percentage of patients (34.2%) agreed to continue telemedicine after the COVID-19 pandemic (Aashima & Sharma, 2021.) Barriers addressed to telemedicine use were also discussed. The inability to complete physical assessments and technological difficulties was reported in close to 50% of the studies. In some cases, patients without internet and smartphones were excluded from the program. In surgery, many female participants refused telemedicine because of a lack of privacy while examining scars. In another study, a minority of surgical patients (34.2%) agreed to continue telemedicine after the COVID-19 pandemic. Patients with epilepsy reported a lack of personal contact as a concern with telemedicine (Aashima & Sharma, 2021).

A cross-sectional survey by Sankaran et al. (2020) included 298 participants who were offered after-hour telehealth services in a single-family medicine clinic. The study surveyed patient preference for video conferencing, proficiency and access to technology, and the advantages and disadvantages of telehealth. The sample consisted of 213 patients; 91 were of African American descent. A smaller percentage of participants were Caucasian (30.3%), 10 percent were Latino, and three percent were of Asian descent. In after-hour telehealth conference calls, participants were asked opinions on the care they received and their perceived advantages and disadvantages of the technology. The results reported that most participants found easy access to video calling devices (75.1%, $p<.0001$) and that they enjoyed the video communications (71%, $p<.005$.) One hundred and sixty-five participants (55.4%) preferred video conference calls over telephonic communication with their provider and 25% of patients preferred telehealth conferencing with their provider all the time. Participants under 48-years of age had the highest self-identified proficiency using digital devices, and patients with video experience were three times more likely to prefer video calling (Sankaran et al., 2020).

Research by Darcourt et al. (2021) reviews work by providers at a metropolitan hospital in Houston, where 1,762 cancer patients were offered telehealth follow-up care. The study's goal was to measure patient and provider satisfaction with telehealth. Only 1,477 participants agreed to participate. Those who declined to participate were elderly ($p<.0001$), resided-in lower-income areas ($p=.0021$), and were less likely to have commercial health insurance ($p<.0001$.) The authors reported that 92.6% of participants were satisfied with video visits and 65.2% of physicians reported satisfaction with video visits. A significant difference in the mean age in both groups may have skewed the results.

Funderburk et al. (2018) details an evidence-based project by the plastics surgery team at a major Boston, MA medical center. The article reports three Plan-Do-Study-Act cycles to create a clinic process for post-surgical patients. Seventy-two post-surgical patients were offered telehealth follow-up visits, and cosmetic surgical patients were excluded due to billing constraints at the time of the study. The project reports that most patients were comfortable with the technology (81%,) and 23% of patients over the age of 60 were very pleased with the technology needed for the evaluations. Ninety-five percent of patients reported satisfaction with the telehealth consult and 56% of patients over the age of 60 were not comfortable with the technology.

In Lanier, Kuruvilla, and Shih (2020), patient satisfaction was rated high (88%). In this two-month study which was started within one week after the 2020 COVID-19 lockdown, evaluators reviewed patient satisfaction within a metropolitan allergy clinic in Atlanta, GA. A total of 297 patients were sent a six-question survey without an option for written answers that scaled answers from zero to 10 (with 10 being the highest score possible). Participants who rated their encounter 10 were considered satisfied. The study's weakness in which participants were asked if they would like to participate in telehealth services served to identify those White participants were 18.5 times more likely to opt for telehealth than Hispanic patients in practice. The response rate was low (58 participants), and this number or the study results are not reported (Lanier et al., 2020).

In Layfield et al. (2020), 122 participants were treated at a head and neck surgery clinic in an academic institution during the 2020 COVID-19 lockdown. A validated six-point Likert-scale questionnaire was offered to these participants, and 100 of them answered the questionnaire. The patients were called up to three times to offer their responses. The data were

analyzed using the Mann-Whitney *U* test, and the statistical significance was $p<0.05$. Most of the participants were white (85%), with only a few minority groups minimally represented. Most participants were highly satisfied with their telehealth visits (6.23/7) and were satisfied with the quality of interactions with their providers (6.60/7). Participants rated their perception of the telehealth visit at 4.02/7 when asked to compare it to an in-person visit. In this section, most participants expressed lower satisfaction because of lack of human touch and the limitations of the physical exam.

Sathiyaraj et al. (2021) gathered information from 70 patients planning to start chemotherapy at a suburban infusion center. The evaluated participants with video visits were asked to fill out an anonymous and validated survey. The aim was to understand patient satisfaction with their video visit care. Participants were excluded if they could not consent and if they received other infusion therapies besides chemotherapy at the infusion center. This study was conducted during the COVID-19 lockdown period between April 2020 and July 2020. Seventy-two percent of those surveyed reported that they were somewhat or very satisfied with their telehealth visit, and 80% of these participants also reported that they would likely use telehealth in the future. Many participants reported that they would prefer in-person visits (62%), and only 30% of those participating in telehealth answered the survey (Sathiyaraj et al., 2021).

Mullen-Fortino et al. (2019) reported on a retrospective review of the data of a telemedicine program implemented by a surgical group during the pandemic for their pre-admission testing (PAT). The study compares in-patient visits to telehealth consults and was conducted at a large tertiary care academic medical center. Although the group sizes differed greatly (in-person group included 7442 participants while the telemedicine group included 361 participants), the demographics for each group were found to be statistically similar. This study

also reported high levels of patient satisfaction with telehealth visits (4.8/5). This study additionally found that surgical cancelations decreased (0% vs. 1.1%; CI 95%). This study found that patients seen via telehealth had consults that were 20 minutes shorter than in-person consults (21.4-26.5; CI 95%).

Rizzi and Hynes (2020) focused on patient satisfaction and provider satisfaction by evaluating 612 telehealth consults with a telephone survey at a tertiary academic medical center. This study collected surveys from telehealth and in-person consults conducted prior to the 2020 pandemic lockdown and compared the data up to two months during the pandemic lockdown. In this study, patient satisfaction was high, with 95% of participants rating their surgeon in sensitivity to their needs and response rate at 95%, and 93% reported that they would accept telehealth consult again. No statistical difference was identified between the pre-pandemic in-person group to the pandemic telehealth group in surgeon sensitivity and response to concerns (χ^2 =0.00, p=1.00); 86% reported high satisfaction with their telehealth encounter in the provider survey.

Ramaswamy et al. (2020) reported results of a Press Ganey survey measuring patient satisfaction at a quaternary urban, academic medical center. The study compared pre-COVID-19 telehealth and in-person consults to COVID-19 consults (April 1, 2019 - March 31, 2020). The Press Ganey Practice Survey is a 31 question five-point Likert scale survey that many hospitals use. The survey was sent to patients three days after their outpatient visits across 40 specialties. Significantly, patient satisfaction scores for telehealth consults were higher than in-person consults for both the pre-COVID-19 group and the COVID-19 group (95% to 92.5%, p=0.001 and 94.8% to 93.0%, p=0.001 respectively). No data related to race, income, education, or comorbidities were reviewed in this study in order to remove all patient identifiers. This large

study supports the use of video visits as an alternative to in-person visits, perhaps, even after the limitations of COVID-19 in healthcare are lifted (Ramaswamy et al., 2020).

Kirby et al. (2021) reported on the results of a 14-question survey emailed to 143 sports medicine patients at a major metropolitan health center between March 30 and April 30 of 2020. The study aimed to analyze patient and physician satisfaction with telemedicine. The response rate for this study was low (13%) with females comprising a majority of the cohort (58.7%). Patients reported high rates of satisfaction with telehealth (4.34/5 +/- 0.90). In addition to levels of patient satisfaction, this study reported a statistical relation (correlation analysis) for factors associated with patient satisfaction. This study noted that the patients were not satisfied with the physical exam completed during the consult (2.75/5.0 +/- 1.28).

Synthesis of Literature

The literature review gathers findings from various specialties to support the use of telehealth for annual wellness evaluations. The specialties represented (surgery, allergy, family medicine and sports medicine, post-surgical plastic surgery, and hematology/oncology) have implemented telehealth and received high marks in patient satisfaction (Aashima & Sharma, 2021). Most of the studies took place during the COVID-19 pandemic (Darcourt et al., 2020; Funderburk et al., 2019; Koonin et al., 2020; Lanier et al., 2020; Layfield et al., 2020; Mullen-Fortino et al., 2020; Nouri et al., 2020; Ramaswami et al., 2020; Rizzi & Hynes, 2020; Sankaran et al., 2020; Sathiyaraj et al. 2020) and although this natural experiment has offered the opportunity to expand research into telehealth, it is possible that the pandemic setting influenced the results related to patient satisfaction. It is possible that without the pandemic, results from Sathiyaraj et al. (2021) and others identified in their study may be more prevalent. In their study, a good number of participants related their preference for in-person experience. In the written

section of their survey, participants noted dissatisfaction with telehealth in that it lacks physical touch, and it is socially awkward.

The literature has also exposed potential barriers to care for 60-65 years or older who may be less comfortable with telehealth. Sankaran et al. (2020) found participants with higher education prefer telehealth; however, Sankaran found no difference in preference related to ethnicity or race for participants under 48 years old who reported higher competence levels with new technology. Many of the studies cited have low levels of patient response (Kirby et al., 2021; Layfield et al., 2019). Response rates ranged from 13.2% (Kirby et al., 2021) to 95% (Layfield et al., 2019) but most of the response rates identified were below 50%.

Gaps in the literature

Telehealth has been shown to have high patient levels of satisfaction yet gaps in the literature remain. No studies reviewed were randomized controlled trials. Social determinants of health that include low access to healthcare, low income, and racial disparities remain controversial. In Lanier, Kuruvilla, and Shih, (2020), the issue of racial disparity is highlighted with the vast difference between White and Hispanic participants. This holds true for the study by Layfield et al. (2020) where most participants were also White. In order to improve access to healthcare for all, more research is needed to investigate the response by minority groups to new telehealth technologies.

Most of the studies took place during the COVID-19 pandemic and although this natural experiment has offered the opportunity to expand research into telehealth, studies that reflect patient attitudes toward telehealth beyond the pandemic are pending. More research into the accuracy of telehealth may be necessary but this study does not focus on the effects of telehealth on clinical adverse events. A comparison between in-person consults and telehealth consult

duration was not the focus of this study, yet, it is possible that some studies have aimed at understanding factors relating to time. Mullen-Fortino et al. (2019) found that pre-admission therapy (PAT) telehealth consults were on average 20 minutes shorter than in person consults. In addition, no literature identified reported on adverse clinical events. More studies are necessary to understand if access to health care can be improved by effectively and efficiently reducing the time of the consult and the time of travels. In addition, no information related to the cost-savings of telehealth are addressed in this proposal.

Although the physical examination is not the focus of this project, Kirby et al. (2021) identified that some patients were not satisfied with the telehealth physical examination. In other studies (Sathiyaraj et al., 2020; Layfield et al., 2020), patients preferred in-person consults and comments, noting the lack of human touch as a deterrent to telehealth consults. Research investigating these perceptions is still necessary for a complete evaluation of telehealth compared to in-person consults. More research into new technologies that support physical exams is also necessary.

CHAPTER FIVE: METHODS

Ethical Implications

Before the 2020 pandemic, specialties such as neurosurgery, urology, and orthopedics have had positive patient outcomes with telehealth (Aashima & Sharma, 2021). However, recent research conducted by the University of California, San Francisco (UCSF) General Internal Medicine Practice and the Richard Fine Peoples clinic found that after two weeks of implementing Telehealth in February of 2020, vulnerable populations of patients over 65 years, non-white patients and low-income patients diminished their total number of consults with their providers. No reason for these findings was provided as a part of this report (Nouri et al., 2020).

A second study by UCSF (Lam et al., 2020) that evaluated over 4500 Medicare patients found that 72% of participants over the age of 85 were not fit for a telehealth consult due to hearing, vision, mentation, or lack of modern media expertise (Lam et al., 2020). These details need to be brought to bear when implementing a sustainable telehealth program. A safe and effective telehealth program needs to address the barriers of patients with limited access to digital devices, poor internet bandwidth, and low digital media literacy.

Wide use of telehealth was not possible before the 2019 COVID pandemic. CMS restricted telehealth visits to remote participants, and insurance payor's reimbursement for telehealth services remained unclear and primarily limited. After CMS lifted these restrictions and facilitated billing for telehealth (Koonin et al., 2020), along with technological advances, telehealth medicine was able to grow exponentially. However, without proper research and data gathering any venture expanding telehealth could produce significant barriers to access healthcare. Expansion based on limited data could be unethical. Providers and educators need to collaborate with institutions in order to provide an evidence-based approach to telehealth.

Design

This project compared two independent groups of patients enrolled from the same clinic. One group received the usual in-person clinic visit and the other group received the telehealth clinic visit. A cross-sectional satisfaction survey was administered to both groups one month after their visit.

Population and Setting

This project was conducted in a small private practice in Orange County (OC), California, between March 17 and April 20, 2022. The goal of this project to assess usage of telehealth preference of the OC community (which is comprised of 40% Caucasian, 34%

Hispanic, 22 % Asian, and approximately three percent Black or African American) and compare patient satisfaction scores for AWEs completed in-person and via telehealth. These demographics differ only slightly from the 2018 population in California, where 36.5% identified as Caucasians, 39.4% Hispanic, 15.5 % Asian, and 5% Black or African American (US census, 2019). The median household income is higher for Orange County residents, where the annual income is about $90,000 yearly (US Census, 2019) compared to $75,000 in California (Data United States of America, 2019). Women comprise 50.7% of the population in OC, and 15% of people living in OC are over 65 years of age (US Census, 2019).

Racial diversity could increase the results' power to expand validity by addressing survival-related biases (Howe & Robinson, 2019).

Participants recruited were evaluated for readiness to participate in telehealth visits or in-person visits. According to Lam et al. (2020), 72% of Americans over the age of 85 years are not ready for telehealth visits. Patients not prepared for telehealth, from the telehealth group as identified in the exclusion criteria. Thus, the exclusion criteria for these patients includes: (1) difficulty hearing or speaking well, (2) a previous diagnosis of memory impairment (3) difficulties seeing well enough to watch television with glasses, (4) do not own an internet-enabled device, or they do not know how to use it, and (6) if they have not used email or internet in the last month. Participants who do not speak or read English well enough will also be excluded from the project.

Recruitment

Paper advertisements were placed in various churches, Starbucks locations, and community centers in all cities within Orange County (OC) . The emphasis on recruitment in

North OC, where there is a greater concentration of Hispanics and African Americans, potentially brought greater diversity to the project.

Plan for Implementation and Data Collection

Participants from the practice and those recruited through community advertisement were included in the project. Those wishing to participate were screened with a telehealth readiness questionnaire and the telehealth readiness assessment via the Healthie patient portal. Those deemed not ready for telehealth were excluded from the project. Participants were consented and enrolled into a group by alternating assignment (in-person vs. telehealth) in order of enrollment. This process continued until 10 participants completed the program. This dissertation is limited to the results of this limited sample, but the project will continue until 102 participants are enrolled. Each participant was assigned a unique code that removed personal information for reporting. Demographic information was collected from each participant at baseline and included annual income, age, gender, and racial identification. This information was stored into the patient electronic medical record EMR (Healthie).

All participants completed the self-administered health questionnaire (MCA) before their initial evaluation to prioritize risks before the first encounter and again at the 4-week follow-up consultation using an online portal. Both groups received a 45-minute AWE, a telehealth diet consult and a 20-minute follow-up consult one month after the initial visit according to their designated group. Patients participating in the telehealth group were asked to take their heart rate, blood pressure and weight at a local pharmacy. In contrast, participants' biometrics in the in-person group were measured in-person. This three-visit combination is the standard of care for all PLM patients in order to increase adherence to recommendations (Stonerock & Blumenthal, 2017). After the follow-up, participants were sent the CAHPS 3.0 survey via email on Survey

Monkey using the patient's de-identified number and the associated introductory letter (AHRQ, 2020).

Measures Instruments and Tools

This project utilized the USPSTF free application (USPSTF, 2021) to determine each participant's recommended screenings. The USPSTF recommendations, formulated by an independent panel of experts, systematically presents evidence to support health-screening recommendations. This application includes recommended screenings according to age and gender for mammograms, colonoscopies, and lab tests (USPSTF, 2021). The MCA (MCA, 2021) is a symptom questionnaire sent to the patient through a secure online portal before the initial consultation and before the follow-up consultation. The MCA consist of 160 questions that relate to how a patient feels. Questions range from height, weight, and heart rate to more personal questions about libido and feelings of sadness. The questions are divided into five domains that emphasize different body systems and the questions are similar to the clinical questions asked during a wellness consult. The aim of the MCA is for the practitioner to quickly identify possible problems that can then be further discussed during the patient-practitioner visit.

The primary outcome for this project was centered on results from the CAHPS Clinician and Group Survey 3.0. This survey is tested and approved by the CAHPS survey as the most widely used and the preferred evaluation tool to examine patients' satisfaction and access to health care (Holt, 2019). All participants were sent CAHPS Clinician and Adult Survey 3.0 to ask about their personal experience after the final appointment. This 31-question four-point Likert scale survey asks participants to rate their provider, rate their satisfaction in communicating with the staff and with their provider, and their satisfaction with the speed at

which the patients' questions were answered. The 2019 CAHPS found that 72% of patients rated their practitioner with a nine or 10 (CMS, 2020).

Data Collection

The CAHPS 3.0 Survey was sent out via email on Survey Monkey to participants. The subscription to this service offers collection of data in addition to the dissemination of the survey. The MCA results, preventive screenings recommended during the evaluations, and nutritional guidance offered during the evaluation were entered into an excel spread sheet without any patient identifiers aside from the participant number. No paper files for participants were necessary for this project. The team for this project consisted of a nurse practitioner, a dietitian, and the front office staff.

Sample Size

A one-tailed *t*-test analysis completed using G*Power noted that two independent groups of at least 51 participants were necessary for 0.80 statistical power. The computer software G* Power is a tool utilized to help determine necessary sample size (Kang, 2021). To ensure that this project had external validity and power, an evaluation with a one-tailed *t*-test analysis was completed using G*Power reporting.

Analysis

At this phase of the project, 10 participants have completed the project. Five participants were in the telehealth group, and five were in the in-person group. This Initial report will consist of the mean and percentages reported on provider ratings and demographic data. The CAHPS was compared to the results of the 2019 national CAHPS practitioner rating data results (eCFR :: 42 CFR 410.15 -- Annual wellness visits providing Personalized Prevention Plan Services: Conditions for and limitations on coverage, 2022).

In the future, larger quantitative analysis for the project centered on the CAHPS Clinician and Group Survey 3.0 and the demographic information will be completed after 102 participants are enrolled. At that time, data collected by Survey Monkey will be analyzed using a one-tailed t-test to compare the means of each group's results. Statistical significance will be met at $P<0.10$. A correlation analysis comparing demographic information to participant satisfaction will be completed and a correlation analysis between the participants excluded from telehealth consults after the readiness questionnaire and demographics of each participant will also be evaluated.

CHAPTER SIX: RESULTS

Between March 17 and April 22, 2022, 50 participants were recruited. Of these, 29 enrolled in the project and 10 completed the four-week process. Twenty-one of the participants who expressed interest have not completed their registration. Of the 29 wishing to participate and screened with a telehealth readiness questionnaire, seven refused to participate, four refused to join the in-office group despite their indicated assignment, and two did not attend their four-week follow-up. These 13 participants have been excluded. The front office staff will continue to reach out to the 21 potential recruits who have not completed the registration process.

Out of the 10 participants, seven were female. Five participants were Hispanic, four were Caucasian and one participant was a Pacific Islander (Figure 2; Figure 3). Among the in-office group (n=5), one participant did not rate their provider (n=4). Of these four, 75% reported 10/10 satisfaction for their provider. One participant rated their provider 7/10 on CAHPS 3.0 in this group. Among the telehealth group (n=5) and all five participants rated their provider and 80% reported 10/10 while one participant rated their provider with 8/10 (Figure 5). So far, participants in the telehealth group have reported higher levels (80%) rating their provider nine or above compared to the 2019 national in-office CAHPS ratings (71%) (Figure 4). These limited and

preliminary findings support the continuation of this project until 102 participants enroll and complete the process.

Figure 1: PRISMA Flow Diagram

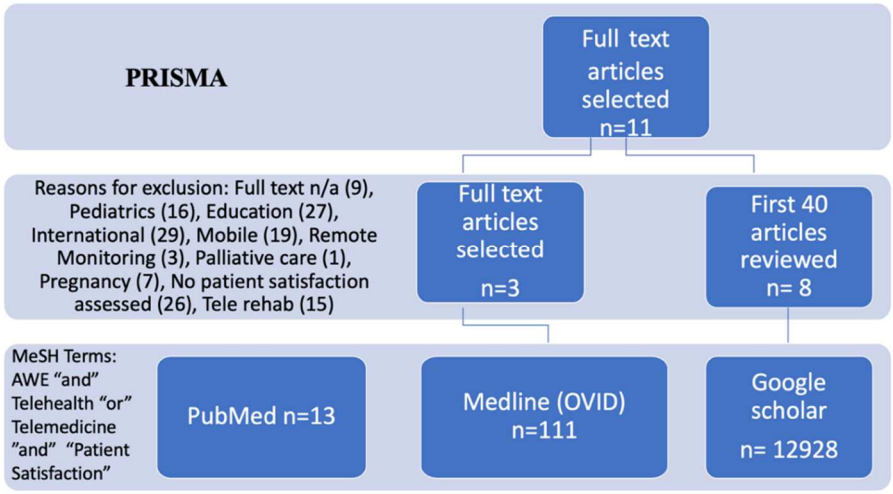


Figure 2: Participant Race

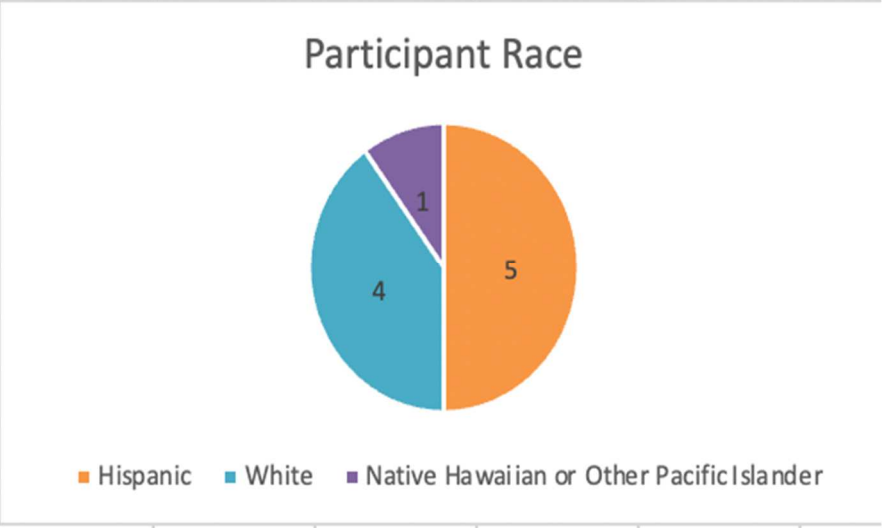


Figure 3: Participant Gender

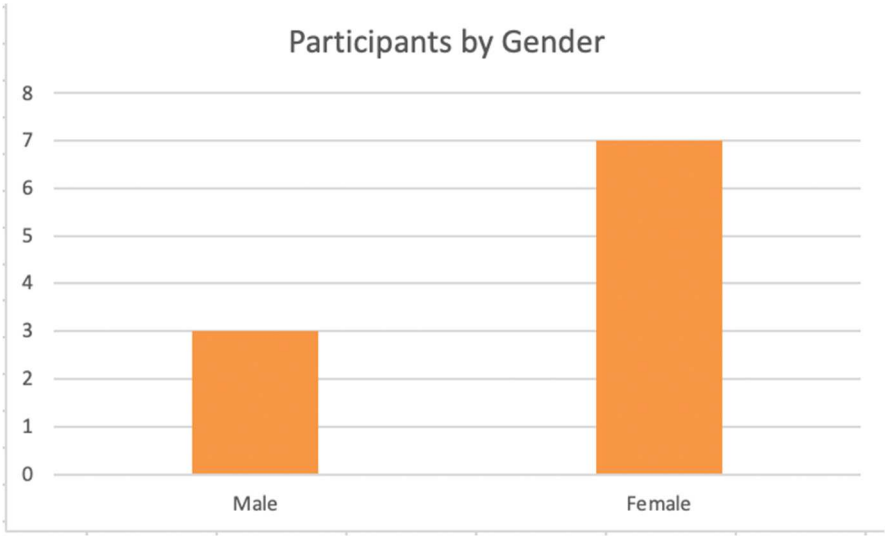


Figure 4: Participant Rating of Provider 9 or Higher

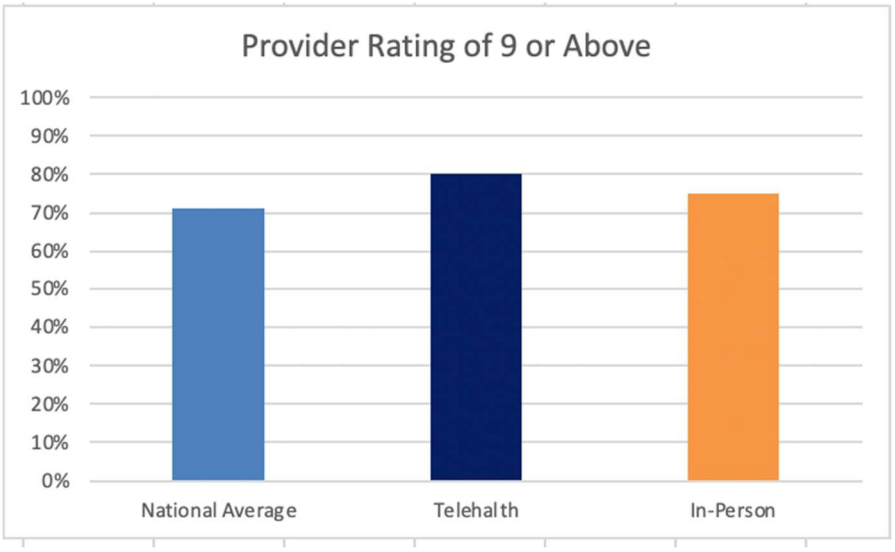
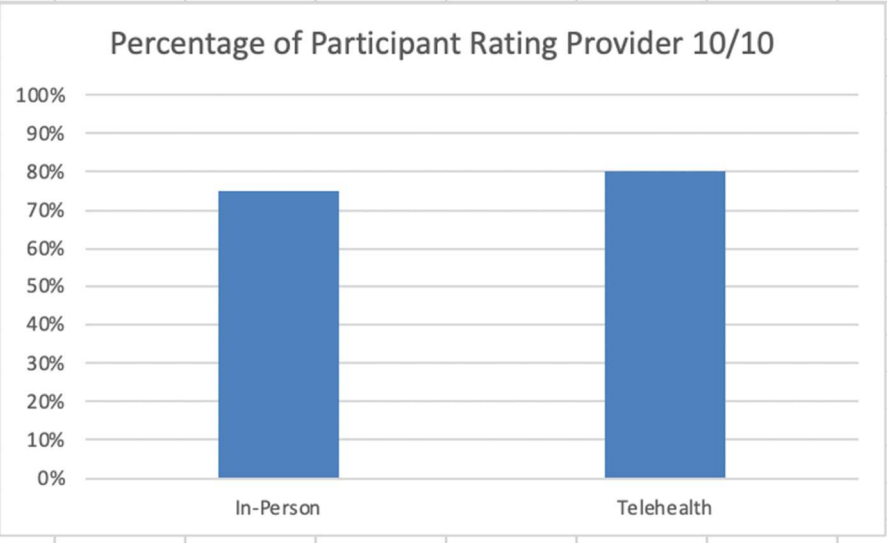


Figure 5: Percentage of Participants Rating Provider with 10/10



CHAPTER SEVEN: DISCUSSION

These preliminary results show it is feasible that patients will be equally or more satisfied with telehealth AWEs. This could yield more significant access to care in specific groups and populations who have not participated in telehealth preventive health evaluations. Greater access to primary care and preventive medicine could decrease the cost of health care by reducing tertiary emergency room visits (Sankaran et al., 2020) and by reducing the cost of overall care by five-point seven percent (Beckham et al., 2018). The implementation of telehealth preventive health evaluations could lower the cost of transportation, loss of wages, and time constraints and facilitate access to patients currently not engaged with preventive medicine. Future research into this specialty would bring better light to practices attempting to take advantage of the new opportunities offered by technological advances already supported in other areas of medicine.

Limitations

New providers were added to the project during the collection of data and these results may reflect patient satisfaction from newly hired staff. Other variables including patients' preference for telehealth were not evaluated in this project. The generalizability of this project is limited with results from only one outpatient clinic and the time allowed for this project was very short and this preliminary data may be skewed. Despite these limitations, these potentially positive results remain relevant to an out-patient practice aiming to implement telehealth as a sustainable option for care.

Cross-sectional surveys may be biased (Setia, 2016). In this case participants who are deemed not ready for telehealth were not evaluated and this constitutes a biased sample. Additionally, factors associated with patient satisfaction are many and this one-time analysis will not be adequate to pin-point causality of the results (Setia, 2016). A future randomized intervention trail design of patient satisfaction score could improve inference. The questions in the survey about gender and income will provide data to complete this analysis. Although the CAHPS 3.0 is an AHRQ survey that is a validated survey widely used in the U.S., the specificity and sensitivity of the test were not explicitly found in the literature. It is essential to understand that, although many CAHPS surveys are patient satisfaction surveys, they are patient experience surveys (Lehrman and Friedberg, 2015) and this survey includes a provider rating scale (AHRQ, 2020). Some studies reported low response rates to satisfaction surveys (Lanier et al., 2020; Kirby et al., 2021), this project will send the CAHPS 3.0 via email in order to improve the response rate (Brtnikova et al., 2018). The CAHPS has been updated to include a telehealth option, but said survey is not available for reporting purposes at this time (AHRQ, 2020).

CONCLUSION

In conclusion a future project with the plan-do-study-act or a randomized intervention study could help address questions of causality if needed. Although the CAHPS 3.0 is an AHRQ survey that is a validated survey widely used in the U.S., the test's specificity and sensitivity are not explicitly found in the literature. It is essential to understand that, although many CAHPS surveys are patient satisfaction surveys, they are patient experience surveys (Lehrman & Friedberg, 2015). This survey includes a provider rating scale (AHRQ, 2020). Results may be skewed because this project transpired were still meeting with their healthcare providers via telehealth. This trend in the community may have strongly influenced the participants' decisions to join the telehealth group.

It is feasible that utilizing the data presented in wellness and preventive medicine will yield more significant access to care in specific groups and populations who have not participated in telehealth preventive health evaluations. Greater access to primary care and preventive medicine could decrease the cost of health care by reducing tertiary emergency room visits (Sankaran et al., 2020) and by reducing the cost of overall care by five-point seven percent (Beckham et al., 2018) . The implementation of telehealth preventive health evaluations could lower the cost of transportation, loss of wages, and time constraints and facilitate access to patients currently not engaged with preventive medicine. Future research into this specialty would bring better light to practices attempting to take advantage of the new opportunities offered by technological advances already supported in other areas of medicine.

APPENDICES

Appendix A

CAHPS Clinician and Group Survey

Online Survey: Initial Email

Include direct link to survey

Dear {Mr./Ms.} [LAST NAME],

We at [NAME OF PROVIDER ORGANIZATION] need your help. Our records indicate that you have visited [PROVIDER'S NAME] in the last 6 months, and we would like you to tell us about your care. We are committed to providing you with the best quality health care available, and your input will help us to achieve this goal. This brief survey should only take about [TIME] minutes or less of your time.

Click the following link to be directed to the survey: [LINK TO SURVEY]. You will need a username and password to submit your survey responses.

Username: Password:

The information that you provide will be kept completely private and confidential. Your answers will never be matched with your name. No one involved in your care will see your individual answers. We have hired [NAME OF SURVEY VENDOR], an independent professional survey organization, to conduct the survey. [VENDOR] will combine your answers with those of other people who complete the survey to create a report that tells us about our patients' experiences with our providers and medical offices.

We hope you will take this chance to tell us about your experiences with health care. Please complete your survey by [MONTH/DAY/YEAR]. You may choose to participate or not, but the more people who respond, the greater our ability to improve the quality of care you receive. If you choose not to participate in the survey, this will not affect the health care you get from your providers.

If you have any questions about this survey, please call [CONTACT NAME] at [(XXX) XXX-XXXX]. You can also call this number if you do not wish to participate in the survey. All calls to this number are free. Thank you for helping to make health care at [NAME OF PROVIDER ORGANIZATION] better for everyone!

Sincerely,
[NAME OF PERSON REPRESENTING PROVIDER ORGANIZATION]

Nota: Si quiere un cuestionario en español, por favor llame al [(XXX) XXX-XXXX].

Online Survey: Second Reminder Email

CAHPS® Clinician & Group Survey

Version: 3.0
Population:
Adult
Language:
English

Notes

- **References to "this provider" rather than "this doctor:"** This survey uses "this provider"to refer to the individual specifically named in Question 1. A "provider" could be a doctor, nurse practitioner, physician assistant, or other individual who provides clinical care. Surveyusers may change "provider" to "doctor" throughout the questionnaire. For guidance, pleasesee **Preparing a Questionnaire Using the CAHPS Clinician & Group Survey**.
- **Supplemental items:** Survey users may add questions to this survey. Please visit the CAHPS Web site to review supplemental items developed by the CAHPS Consortium anddescriptions of major item sets.

For assistance with this survey, please contact the CAHPS Help Line at 800-492-9261 orcahps1@westat.com.

File name: adult-eng-cg30-2351a.docxLast updated: July 1, 2015

Instructions for Front Cover

- Replace the cover of this document with your own front cover. Include a user-friendly titleand your own logo.
- Include this text regarding the confidentiality of survey responses:

  Your Privacy is Protected. All information that would let someone identify you or your family will be kept private. {VENDOR NAME} will not share your personal information with anyone without your OK. Your responses to this survey are also completely **confidential**. You may notice a number on the cover of the survey. Thisnumber is used **only** to let us know if you returned your survey so we don't have to send you reminders.

  Your Participation is Voluntary. You may choose to answer this survey

  or not. Ifyou choose not to, this will not affect the health care you get.

  What To Do When You're Done. Once you complete the survey, place it in the envelope that was provided, seal the envelope, and return the envelope to [INSERTVENDOR ADDRESS].

  If you want to know more about this study, please call XXX-XXX-XXXX.

Instructions for Format of Questionnaire

Proper formatting of a questionnaire improves response rates, the ease of completion, and theaccuracy of responses. The CAHPS team's recommendations include the following:

- If feasible, insert blank pages as needed so that the survey instructions (see next page)and the first page of questions start on the right-hand side of the questionnaire booklet.
- Maximize readability by using two columns, serif fonts for the questions, and ample whitespace.
- Number the pages of your document, but remove the headers and footers inserted to helpsponsors and vendors distinguish among questionnaire versions.

Additional guidance is available in **Preparing a Questionnaire Using the CAHPS**

Clinician &Group Survey.

Your Provider

1. Our records show that you got care fromthe provider named below in the last 6 months.

Name of provider label goes here

Is that right?

- ☐ Yes
- ☐ No → If No, go to #23 on page 4

The questions in this survey will refer to the provider named in Question 1 as "this provider."Please think of that person as you answer the survey.

2. Is this the provider you usually see if you need a check-up, want advice about a healthproblem, or get sick or hurt?

- ☐ Yes
- ☐ No

3. How long have you been going to thisprovider?

- ☐ Less than 6 months
- ☐ At least 6 months but less than 1 year
- ☐ At least 1 year but less than 3 years
- ☐ At least 3 years but less than 5 years
- ☐ 5 years or more

Your Care From This Provider in theLast 6 Months

These questions ask about **your own** health care. Do **not** include care you got when you stayed overnight in a hospital. Do **not** includethe times you went for dental care visits.

4. In the last 6 months, how many times didyou visit this provider to get care for yourself?

- ☐ None → If None, go to #23 on **page 4**
- ☐ 1 time
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 to 9
- ☐ 10 or more times

5. In the last 6 months, did you contact this provider's office to get an appointment foran illness, injury, or condition that **needed care right away**?

- ☐ Yes
- ☐ No → **If No, go to #7**

6. In the last 6 months, when you contacted this provider's office to get an appointment for **care you needed right away**, how oftendid you get an appointment as soon as you needed?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

7. In the last 6 months, did you make any appointments for a **check-up or routinecare** with this provider?

- ☐ Yes
- ☐ No → **If No, go to #9**

8. In the last 6 months, when you made an appointment for a **check-up or routine care** with this provider, how often did you get an appointment as soon as you needed?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

9. In the last 6 months, did you contact thisprovider's office with a medical questionduring regular office hours?

- ☐ Yes
- ☐ No → **If No, go to #11**

10. In the last 6 months, when you contacted this provider's office during regular officehours, how often did you get an answer toyour medical question that same day?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

11. In the last 6 months, how often did this provider explain things in a way that waseasy to understand?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

12. In the last 6 months, how often did thisprovider listen carefully to you?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

13. In the last 6 months, how often did this provider seem to know the important information about your medical history?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

14. In the last 6 months, how often did this provider show respect for what you had to say?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

15. In the last 6 months, how often did thisprovider spend enough time with you?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

16. In the last 6 months, did this provider ordera blood test, x-ray, or other test for you?

- ☐ Yes
- ☐ No → **If No, go to #18**

17. In the last 6 months, when this provider ordered a blood test, x-ray, or other test for you, how often did someone from this provider's office follow up to give you those results?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

18. Using any number from 0 to 10, where 0 isthe worst provider possible and 10 is the best provider possible, what number wouldyou use to rate this provider?

- ☐ 0 Worst provider
- ☐ possible1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10 Best provider possible

19. In the last 6 months, did you take anyprescription medicine?

- ☐ Yes
- ☐ No → **If No, go to #21**

20. In the last 6 months, how often did you andsomeone from this provider's office talk about all the prescription medicines you were taking?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

Clerks and Receptionists at ThisProvider's Office

21. In the last 6 months, how often were clerksand receptionists at this provider's office ashelpful as you thought they should be?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

22. In the last 6 months, how often did clerksand receptionists at this provider's officetreat you with courtesy and respect?

- ☐ Never
- ☐ Sometimes
- ☐ Usually
- ☐ Always

About You

23. In general, how would you rate your overallhealth?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

24. In general, how would you rate your overall **mental or emotional** health?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

25. What is your age?

- ☐ 18 to 24
- ☐ 25 to 34
- ☐ 35 to 44
- ☐ 45 to 54
- ☐ 55 to 64
- ☐ 65 to 74
- ☐ 75 or older

26. Are you male or female?

- ☐ Male
- ☐ Female

27. What is the highest grade or level of schoolthat you have completed?

- ☐ 8th grade or less
- ☐ Some high school, but did notgraduate
- ☐ High school graduate or GED
- ☐ Some college or 2-year degree
- ☐ 4-year college graduate
- ☐ More than 4-year college degree

28. Are you of Hispanic or Latino origin ordescent?

- ☐ Yes, Hispanic or Latino
- ☐ No, not Hispanic or Latino

29. What is your race? Mark one or more.

- ☐ White
- ☐ Black or African American
- ☐ Asian
- ☐ Native Hawaiian or Other PacificIslander
- ☐ American Indian or Alaska Native
- ☐ Other

30. Did someone help you complete thissurvey?

- ☐ Yes
- ☐ No → **Thank you.**

Please return the completedsurvey in the

postage-paid envelope.

31. How did that person help you? Mark one ormore.

- ☐ Read the questions to me
- ☐ Wrote down the answers I gave
- ☐ Answered the questions for me
- ☐ Translated the questions into mylanguage
- ☐ Helped in some other way

Appendix B

Metabolic Code Assessment

CLIENT INFORMATION

Name: ********** **Email:** ********** **Sex:** Female
DOB: Invalid date

Phone: QUESTIONNAIRE

1.What is your height in feet inches?*

2.Whatisyourweightinpounds?*

3. What is your resting heart rate (pulse)?

 Don't Know < 40
 40 - 69
 70 - 76

 77 - 80 > 80

4. What is your current top systolic pressure?

 Don't Know < 80
 80-109
 110 - 120 121 - 145 > 145

5. What is your current bottom diastolic pressure?

 Don't Know < 40
 40 - 59
 60 - 85

 86-100 > 100

6. What is your salivary pH?

 5 to 6
 6.1 - 6.9
 7 - 7.2
 7.3 - 7.8
 > 7.8
 Don't know

7.Do you get regular exercise?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

8.What best describes your diet?*

 None - eat anything you want PALEO
 Low Carb
 Mediterranean

 Vegetarian
 Calorie Controlled (i.e. Weight Watchers®, Slim Fast®, etc...) Ketogenic

9.How many servings of caffeine containing drinks do you consume per day?*

0
 1 to 2 3 to 5 >5

10.How many times a day do you eat?*

 0-2
 3 to 4
 5 or more

11.How many times a day do you eat a starchy food with your meal?*

0
 1 to 2
 3 or greater

12.How many servings of sweets do you eat daily?*

 0 or occasionally 1 to 2
 3 or greater

13.How many servings of fruit do you eat per day?*

0 1 2 3 >3

14.Do you make sure fiber is in your daily diet?*

 Never
 Rarely

 Sometimes
 Frequently/Often Always

15. How many cans of sweetened sodas or other sweetened beverage do you drink daily?*

0
 1 to 2
 2 or more

16. How many cans or containers of artificially sweetened beverages do you consume daily?*

0
 1 to 2
 2 or more

 3 or more

17.How many alcoholic beverages do you drink weekly?*

 0 to 2
 3 to 7
 8 to 14
 More than 2 drinks daily

18. Do you get dizzy when standing up from a seated position? If you have problems with fainting see a practitioner immediately*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

19. Does your energy level drop significantly or do you have an "energy crash" in the mid to late afternoon?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

20.Do you feel emotionally flat, less able to feel happiness or joy?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

21.Do you stress eat and reach for comfort foods?* 22.Do you feel there is too much stress in your life?*
Never

 Rarely
 Sometimes

 Frequently/Often Always

23. Do you usually feel anxious or nervous during the course of your day?*

24. Do you feel overcommitted during the course of your day?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

25. Do you get easily agitated and snap at co-workers or family members?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

26. Do you meditate or use mind-body techniques such as breathing, yoga, visualization, or other techniques to manage stress?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

27. Do you have a problem with snacking in the evening or getting up at night to eat?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

28. Do you get goosebumps or are you startled easily?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

29. Do you feel tired from morning to night?*

 Never
 Rarely

 Sometimes
 Frequently/Often Always

30. Do you have trouble keeping weight off no matter how much you exercise or diet?*

31. Do your hands/feet feel cold?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

32. Do you have trouble getting up in the morning?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

33. Do you have dry skin and/or brittle hair or nails?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

34.Does your body temperature usually run low?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

35. Do you have heart palpitations?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

36. Do you ush (turn red in the cheeks) easily?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

37. Do your hands shake or tremble?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

38. Do you eat a lot but can't gain weight?*
39. Do you have high energy levels followed by exhaustion or extreme tiredness?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

40. Do you get anxious, nervous, shaky, or agitated if you go more than 3-4 hours without eating?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

41. Are you more than 20 pounds over your ideal body weight?* 42. Do you get tired after eating a bigger meal?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

43. Have you been told you have pre-diabetes or have insulin resistance?*
44. Do you get periodic energy crashes during the day that are relieved by food?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

45. Do you get night sweats?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

46.Doyouhaveconstipation?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

47. Do you have diarrhea?*

 Never
 Rarely

 Sometimes
 Frequently/Often Always

48. How many bowel movements do you have daily?*

0
 1 to 3 >3

49. Have you ever taken antibiotics for an extended period of time and have NOT taken probiotics afterward to restore gut flora?*

50. Do you feel gassy or bloated?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

51. Have you taken cortisone-type ("steroid" drugs, like prednisone or methylprednisolone) for extended periods of time during your lifetime?*

52. Do you get athlete's foot ("jock" itch) or fungus on your skin or nails easily?*

 Never
 Rarely
 Sometimes
 Frequently/Often

 Always

53. Do you get symptoms from damp, muggy days, or moldy places - like being tired, Trouble breathing or runny nose/sneezing?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

54.Do you have any known food intolerances or allergies to foods?*
55. Do you have difficulty thinking clearly at times - like you are "pushing a thought through jello"?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

56.Do you currently avoid foods that contain gluten?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

57.Do you belch or burp after eating a meal?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

58.Do you feel uncomfortably full after eating?* Never

 Never

 Rarely
 Sometimes
 Frequently/Often Always

59. Do you have a history of anemia (low iron, B12 or folic acid) that doesn't respond well to treatment?*

60.Do you get stomach pains before or after eating?*
61.Have you been told you have acid reflux or a gastrointestinal ulcer?* 62.Do you have sinus problems?*

63.Do you get cold sores or fever blisters often?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

64.Do you feel that you get colds or other infections easily?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

65.Do you have any environmental allergies or chemical sensitivities?*

66.Do you itch or get skin rashes?*

- Never
- Rarely
- Sometimes

- □ Frequently/Often □
- Always

67.Do you breath through your mouth instead of your nose?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

68.Do you have a history of herpes?*

69.Do your joints or muscles hurt?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

70.Do you currently feel depressed?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

71.Do you eat past being full to boost your mood or to feel better?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often
□ Always

72.Is your memory worse than it used to be?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often
□ Always

73. How many hours of restful sleep do you get on average?*

□<3 □ 3 to 4 □ 5 to 6 □ 7 to 9 □>9

74. Have you tested positive for the MTHFR (methylenetetrahydrofolate reductase) gene SNP or have a folate (folic acid) deficiency?*

75. Do your muscles cramp or do you experience restless legs at night?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

76. Do you get out of breath easily on exertion such as walking up a flight of stairs?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

77. Do you get swelling in your feet or ankles?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

78. Do you know if your lipids (cholesterol, triglycerides) are currently elevated?*

79. Have you been told by your doctor that you have high blood pressure and you are *NOT* currently taking medications for blood pressure?*

80.Does your head, arms and/or legs feel heavy and hard to hold up?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

81.Do you have ringing or buzzing in your ears?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

82.Do your hands or feet feel numb or tingle?*

□ Never
□ Rarely
□ Sometimes
□ Frequently/Often □ Always

83.Have you been told by your doctor that you have shingles?* 84.Do you get out of breath easily on exertion?*

Never
 Rarely/Sometimes
 Frequently/Often Always

85.Do you cough?*

Never/ Rarely
 Sometimes
 Frequently/Often Always

86. Do you clear your throat?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

87. Do you smoke (tobacco or other) OR do you get exposed to "second-hand smoke"?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

88. Do you get bronchitis easily?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

89. Do you live in an industrialized area with large amounts of pollution?*

 No
 I have in the past I don't know

90. Do you have trouble digesting greasy and/or fried foods?*

 Never
 Rarely
 Sometimes
 Frequently/Often /Always

91. Do you have a sour or metallic taste in your mouth?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

92. Do you have bad breath?*
 Never
 Rarely
 Sometimes
 Frequently/Often Always

93. Do you have excessive body odor?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

94. Have you tested positive for heavy metals and have NOT been treated for them?*

95. Do you have eczema or other skin conditions like psoriasis, rosacea, or hives?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

96. Are your lymph glands swollen or sore?*

 Never Rarely /Sometimes
 Frequently/Often Always

97.Do you have burning or pain when urinating?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

98.Do you have trouble holding your urine?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

99.Do you have a history of frequent urinary tract infections or cystitis?* 100.How many 8-ounce glasses of water do you usually drink daily?*

 0 to 2 3 to 4 5 to 8 >8

101.How many servings of vegetables do you eat daily?*

0
 1 to 2 3 to 5 6 to 7 >7

102.Where are you with your menstrual cycle?*

 Ovulating
 Perimenopause
 Post-menopause or menopause

103. Do you have skin thinning or wrinkling?*
104. Have you been diagnosed with uterine broids or ovarian cysts?*
105. Do you have trouble with weight loss around the thighs no matter what you do?*

106. Do you take or use estrogen as bioidentical hormonal replacement therapy?*

107. Do you have osteopenia and/or osteoporosis?*

108. Do you have adult acne?*

109. Do you have migraine headaches?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

110. Do you or did you have a history of erratic periods?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

111. Do you feel overwhelmed most of the time?*

 Never
 Rarely
 Sometimes
 Frequently/Often

 Always

112. Do you use progesterone as bioidentical hormonal replacement therapy?*

113. Are you unable to achieve an orgasm?* 114. Is your libido reduced?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

115. Do you have an over-abundance of hair on your body?* 116. Have you lost muscle strength?*
117. Do you take or use testosterone replacement therapy?*

118. Do you take tylenol (acetaminophen)?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

119. Are you taking antibiotics presently?*

120. Are you taking acid blocking medications, including PPIs (proton pump inhibitors) or H2 blockers (ranitidine or Zantac, cimetidine, or Tagamet)?*

121. Are you taking medications for anxiety, to relax or for sleep?*

122. Are you taking an antihistamine?*
123. Are you prescribed anticonvulsant drugs for seizures or other health condition?*

124. Are you taking medications for depression or mood imbalances or other psychiatric disorder?*

125. Are you taking medications to help control blood sugar levels or diabetes?*

126. Are you taking medications for osteoporosis prevention and/or bone health?*

127. Are you taking oral or inhaled corticosteroids (“steroids”)?*
128. Are you taking a medication for your cholesterol called a “statin”?*

129. Are you taking any other medications to help lower your cholesterol other than a “statin”?*

130. Are you taking “fluid pills” or diuretics?*
131. Are you taking a drug for your heart called digitalis or Lanoxin?*

132. Are you taking hormonal replacement therapy, including synthetic estrogens (including Premarin or conjugated estrogen) or progestins?*

133. Are you prescribed a beta-blocker for your heart or blood pressure?*

134. Are you taking an ACE inhibitor or ARB for your blood pressure or heart condition?*

135. Are you taking potassium prescribed by your doctor?*

136. Are you taking prescribed medications to help improve your memory?*

137. Do you take NSAIDs (non-steroidal anti-inflammatory drugs) like ibuprofen (Advil) or naproxen (Aleve)?*

 Never
 Rarely
 Sometimes
 Frequently/Often Always

138. Do you take oral contraceptives (birth control "pills")?*

139. Are you prescribed drugs for pain called opioids, including hydrocodone, codeine, morphine, meperidine (Demerol), methadone, oxycodone (Oxycontin) or fentanyl?*

140. Are you prescribed medications for thyroid?*

Appendix C

Telehealth Readiness Questionnaire

Instructions

Answer each question by marking the box to the left of your answer.

1. Do you have difficulty hearing or speaking well? ☐ Yes ☐ No
2. Has your doctor ever said you with any memory impairment? ☐ Yes ☐ No
3. Have you had difficulty seeing well enough to watch television with glasses? ☐ Yes ☐ No
4. Do you own an internet-enabled device? ☐ Yes ☐ No
5. Do you know how to use said device? ☐ Yes ☐ No
6. Have you used email or internet in the last month? ☐ Yes ☐ No

TABLE OF EVIDENCE

RPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
luate medicine ng RS-CoV- ndemic atients cancer assess iers to its lementati	1762 patients offered telehealth option and reasons for declining reported. Group 1: n=1477 patients with cancer who accepted telehealth visits at Houston Methodist. Group2: 285 patients declined telehealth consult.	Cohort study of demographics with satisfaction survey for patients and providers Two-sided pooled or Satterthwait test, Folded F	Oncology/hematology patients and their physician expressed high levels of satisfaction with telehealth visits 92.6%. Majority of physician (65.2%) were also satisfied with telehealth visits. Participants who declined were older (67.7 *v*60.2 years; $P <$ .0001), lived in significantly lower-income areas ($P = .0021$), and were less likely to have commercial insurance ($P <$ .0001). 74% of patients would use telemedicine in the future. Primary concerns for physicians were inadequate patient interactions, problems with acquisition of medical data, missing significant clinical findings, decreased quality of care and potential medical liability. Reasons to decline Telehealth were preference for physical examination (43%), No electronic device (18.6%), technical issues (10.2%) No statistical significance difference race/ethnicity (P= .3493)	Large number of participants report positive experience with telehealth. Limitations: Lack of external validity due to single setting of analysis. Convenience sample decreases external validity and representative population undefined.

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Funderburk, C., Batulis, N., Zelones, J.T., Fisher, A., Prock, K., Markov, N., Evans, A. & Nigrity, J. (2018). Innovations in the plastic surgery care pathway: Using telemedicine for clinical efficiency and patient satisfaction, *Plastic and Reconstructive Surgery Journal, 144*(2). 507-516. DOI: 10.1097/PRS.0000000000005884	Develop and evaluate quality improvement project for implementation of telehealth that evaluates patient satisfaction	Plastic surgery patients with 72 participants Dartmouth-Hitchcock Medical Center Plastic Surgery.	PDSA EBP. Lean Six Sigma methodology Survey assessing 1: Ease of travel, comfort with technology, internet and video-enabled devices at home, overall interest in the internet. 2015- 2016	Three cycle PDSA to develop future-state process map. 14% patients somewhat comfortable with technology. 67% somewhat comfortable or very comfortable with tech. 83% Pt's 40 and younger were very comfortable with tech. 23% of pt.'s 60 and older were very comfortable with tech. 56% of pts. over 60 responded they were not comfortable with tech. 96% said they would use telehealth again. 70% were satisfied. 25% were somewhat satisfied.	Large number of participants reported satisfaction with telehealth. QI study presents EBP implemented. Cosmetic SX patients excluded for financial purposes. Decreases internal validity and e Leichardt scale as to satisfaction unclear. Criteria for satisfied and somewhat satisfied unclear. No statistical analysis offered.

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Sankaran, J., Menachery, S. M., & Bradshaw, R. D. (2020). Patient Interest in Video Integration for After-Hours Telemedicine. *Journal of the American Board of Family Medicine: JABFM*, *33*(5), 765–773. https://doi.org/10.3122/jabfm.2020.05.190362	To evaluate attitudes and patient satisfaction in video calls during after hrs. care.	n=298 Convenience sample of patients 18-85 in one clinic Mean age was 47.9 years; 71.6% were female; African American 63.7%, Asian 3%, Socio-economic level below $25K 36% above $74K 18.8 %	Survey Questions included demographics, preferences, access to video calling devices, and perceived advantages and disadvantages of this technology.	75.1%: Access to video calling devices. Device proficiency was inversely related to age and greatest in18-to-32-years group (χ^2 = 71.18, p<0.0001). 71% enjoyed video communication, directly proportional to education (trend test Z = 2.78, p < .005). Adjusted for both age and education, respondents with college education or above were 3 times more likely to self-identify as “good' with video (OR, 3.11; 95% CI, 1.48-6.64) Under age 48 higher proficiency (Odds ratio (OR), 13.9; 95% CI, 4.79-59.34). Patients w/ prior video experience were 3 times more likely to prefer video calling (Relative risk (RR) = 3.46; 95% CI, 1.95-6.11). Patients calling their doctor 5 x annually preferred video calling significantly more than calling by telephone (RR, 1.61; 95% CI, 1.31-1.97). Faster contact with the primary care provider (19.8%) was the most perceived advantage. Loss of in-person interaction with doctors (37.1%) was the greatest perceived disadvantage.	Majority of participants enjoy video communication. Designated original research. Low socio-economic level evaluated. Diverse study population. Limitations: One clinic-larger study population needed. After hours is only type of consult evaluated. To be a thorough discussion, there should be comments about validity

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Lanier, K., Kuruvilla, M. & Shih, J. (2020). Patient satisfaction and utilization of telemedicine services in allergy: An institutional survey. *The Journal of Allergy and Clinical Immunology, 9*(1), 484-486. https://doi.org/10.1016/j.jaip.2020.09.047	Survey measuring patient satisfaction with a cloud-based telehealth platform of two-way synchronous audiovisual visits by allergy providers.	Urban allergy clinic with 289 telehealth visits. 58% response rate 26% female participants 28% primary diagnosis of asthma 20% rhinitis 9% urticaria 6% drug allergy 22% over 60 58% white 30% black	Six question survey to grade level of satisfaction offered by study member not present during the telehealth consult. Responses rated 0-10	88% of patients rated comfort level with telemedicine as 10. 93% reported easily understanding medical condition. Only 46% will likely prefer telemedicine after resolution of the pandemic. 40% rated telehealth visit equivalent or better than traditional encounter. White patients were 18.5 times more likely than Hispanic patients to be comfortable with telemedicine. Patients with government insurance were 2.5 more likely to prefer telehealth.	High patient satisfaction/comfort with telehealth. Telehealth shown to be effective in communication with patients. Limitations: Study does not include statistical analysis or power analysis. Strength: Study shows results by demographics. Study shows balanced approach to evaluate participant outlook on telehealth post-pandemic

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Layfield, E., Trianatafillou, V., Prasad, A., Deng, J., Shanti, R. M., Newman, J. G. & Rajasekaran, K. (2020). Telemedicine for head and neck ambulatory visits during COVID-19: Evaluating usability and patient satisfaction. *Head and Neck, 42*(7), 1681-1689. https://doi.org/10.1002/hed.26285	To systematically evaluate patient satisfaction with video synchronous telehealth consults in a head and neck surgery clinic.	Synchronous Head and Neck Otolaryngology surgery consults with faculty at academic center (University of Pennsylvania.) n=100 of 122 video telehealth consults 95% participated in survey 41% female 85% white 6% black 94% were return patients	Quality improvement (QI) retrospective chart review implementing validated survey (Telehealth Usability Questionnaire) Survey answered over the telephone.	Data analyzed with Mann-Whitney U test. Statistical significance set at $P<0.05$. High score of patient aggregate patient satisfaction with telehealth (6.29) on a scale of 0-7. Participants highly satisfied with telehealth.	High participant satisfaction/comfort with telehealth. High participant satisfaction with patient provider interactions Limitations: Bias in patient selection. Patients without access to platforms were excluded. Statistical significance of individual results was not discussed. Cancer patients could be satisfied with telehealth as appropriate response to pandemic. Strength: Study included section for narrative where patients reported primary problem with telehealth was lack of human touch and limited physical exams

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Sathiyaraj, A. Lopez, H & Surapaneni, R. (2021). Patient satisfaction with telemedicine for prechemotherapy evaluation during the COVID-19 pandemic. *Future Oncology, 17*(13). https://doi.org/10.2217/fon-2020-0855	To evaluate patient satisfaction with video visits (telehealth)for prechemotherapy patients during the COVID-19 pandemic	Single center in suburb of Austin, Texas. n=70 Survey completion rate was 30% (70/231) Respondents 67.6% women	Cross-sectional retrospective cohort study utilizing survey at the time of chemotherapy between June and July 2020. Survey: Baylor Scott and White Cancer Center Patient Satisfaction Survey	Primary outcome = 72.9% of participants were somewhat to very satisfied with video visits. 65.2% of patients preferred in-person visits. 80% of patients would likely continue using video visits in the future. 70% rated video visits just as good as in-person visits. 0% rated video visits better than in-person visits. 72% reported that technology was 'mostly easy' to use.	High participant satisfaction/comfort with telehealth. Most patients preferred in patient visits Limitations: Selection bias with 90% of participants were already accustomed to in-person consultations. Low response rate (30%) Statistical significance is not discussed. Demographics not addressed Strength: Study included section for narrative where patients reported primary problem with telehealth was lack of human touch and limited physical exams

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Mullen-Fortino, M., Rising, K. L., Duckworth, J., Gwynn, V., Sites, F. & Hollander, J. E. (2019). Presurgical assessment using telemedicine technology: Impact on efficiency, effectiveness and patient experience of care. *Telemedicine and e-Health, 25*(2). https://doi.org/10.1089/tmj.2017.0133	To evaluate Jeff Connect (telehealth) patient visits for satisfaction and effectiveness. The objective of study was to evaluate whether telemedicine would increase efficiency of presurgical assessment encounters by measuring patient satisfaction and measure percentage of canceled procedures in each group.	Participants over 18 at Thomas Jefferson University Hospital n=246 from 68% response rate of telemedicine group. Two groups: Telemedicine (n=361) and Usual Care (n=7442) 56%of telehealth visits for orthopedic head and neck procedure. No statistical significance in gender, age or race noted	Retrospective review of data after implementing telemedicine as for pre-surgical assessment encounters 5-point Likert Scale survey Free text comments were available	Comparison between means completed with Students t tests. 97.5% would use telehealth again 4.8 of 5 were satisfied with telemedicine encounter with nurse practitioner 0% cancelations in telemedicine group compared to 1.1% cancelation of procedures in the traditional care group The majority of written comments related visit as easy and efficient. Dissatisfaction was due to technical issues. All results are given with 95% confidence interval.	High participant satisfaction/comfort with telehealth. No canceled procedures in the telehealth group Limitations: Telehealth group seems very large compared to the in-person group. Selection biases were asked preference prior to participating in telehealth group Strength: Study included section for narrative where patients expressed mostly ease with telehealth. Demographics reported in statistical terms to compare the two groups.

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Rizzi, A. M. & Hynes, K. K. (2020). The new 'normal': Rapid adoption of telemedicine in orthopaedics during the COVID-19 pandemic. *Inquiry, 51*(12), 2816-2821. https://doi.org/10.1016/j.injury.2020.09.009	To evaluate patient satisfaction with telemedicine encounter at orthopedic clinic. To evaluate physician satisfaction with telemedicine encounter at an orthopedic clinic.	Orthopedic clinic in academic institution. English-speaking individuals 18. Jan 1-Feb 29 7999 in-person visits and 0 telemedicine visits. April 6-May 22: 1675 in-person visits, 379 video visits and 395 telephone visits. Surgeons evaluated 194 synchronous video consul	Pre-pandemic group. Between Jan. 1 to Feb. 29, 2020 patients invited to complete validated satisfaction survey. Post Pandemic group: Between April 6-May 22, 2020, consisted of patient satisfaction survey over the phone. 3 phone calls attempted 12 Surgeons completed surveys for telehealth visits accomplished.	Chi-Square analysis was used for variables and t-test for continuous data. Statistical significance was set at $p=<0.05$. Video to visit type satisfaction Chi-Square =2.29, p =0.891. Phone to visit type satisfaction Chi-Square = 11.17, p= 0.192. 92% of patients reported they would complete another telehealth encounter. 95% of participants report surgeons were sensitive to their needs. 94.8 % of patients reported that surgeons were sensitive to their needs in pre-pandemic group. Surgeons rated 86% of video encounters as satisfied or highly satisfied. No difference in surgeon satisfaction between phone and video consults (χ^2 =2.38, p= 0.123.)	High participant satisfaction/comfort with telehealth. High provider satisfaction levels Limitations: Many patients were concerned about exposure to COVID-19 in tertiary care facility. Result could be largely associated with fear of COVID-19 exposure. Low patient response rate of 66.4%. Decision to be included in telemedicine was at surgeon's discretion. Selection biases were asked preference prior to participating in telehealth group Strength: Study included section for narrative where patients expressed mostly ease with telehealth. More investigation needed to understand the variables affecting the effectiveness of telemedicine in orthopedics.

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Ramaswamy, A., Yu, M., Drangsholt, S., Ng, E., Culligan, P. J., Schlegel, P. N. & Hu, J. C. (2020). Patient satisfaction with telemedicine during the COVID-19 pandemic: Retrospective Cohort Study. *Journal of Medical Internet Research, 22*(9). https://preprints.jmir.org/preprint/2078	To compare patient satisfaction between video and in-person visits.	Quaternary academic setting. Analyzed 38, 609 participants. One month sample between April 1, 2019, to March 31, 2020. Participants over 18-year-old. Pre-COVID: 36,164 in-person and 109 video visits Post-COVID: 1825 in-person and 511 video visits	Retrospective cohort study. Two groups: pre-COVID period and COVID-19 period 5-point Likert scale Press Ganey patient satisfaction survey (Outpatient Medical Practice Survey) outcomes. Press Ganey was sent 2-3 days after completion of visit or video visit. Deidentified scores. All video visits were synchronous	Independent Pre-COVID-19 to COVID-19 variable compares with paired t test and Chi-Square. Significance is p=0.05. Dependent variable was Press Ganey Patient satisfaction score. Pre-COVID-19: Telemedicine 95.01 and in-person 92.46. COVID-19 period: Telemedicine: 94.87 and in-person 93.02 Telemedicine p=.31 and COVID-9 $p=0.004$. Patient satisfaction across study was higher in telemedicine than in-person visits (94.9% to 92.5%, p<0.001.	Patient satisfaction across study was higher in telemedicine than in-person visits. Limitations: De-identified data does not capture influence of race, income, education or comorbidities. Press Ganey patient satisfaction survey was not specific to telehealth even though new survey was available. Strength: Press Ganey is a used validated tool used by 60% of all US hospitals in outpatient settings. Statistical significance identified and discussed. Large study

CITATION	PURPOSE	SAMPLE/ SETTING	METHODS	RESULTS	DISCUSSION, INTERPRETATION, LIMITATION OF FINDINGS
Kirby, D. J., Fried, J. W., Buchalter, D. B., Moses, M. J., Hurly, E. T., Cardone, D. A., Yang, S. S., Virk, M. S., Rokito, A. S., Jazrawi, L. M. & Campbell, K, A. (2021). Patient and physician satisfaction with telehealth during the COVID-19 pandemic: Sports medicine perspective. *Telemedicine and e-Health, 27*(10). https://doi.org/10.1089/tmj.2020.0387	Analyze patient and physician satisfaction with telemedicine in sports medicine	Major Metropolitan teaching hospital during COVID-19 pandemic. 1082 patients participated in telemedicine and received the survey but only 13.2% completed it. Demographic White 67.1% Black 14% Hispanic 0.7% Average age was 55 years +/- 14.6	Retrospective cohort study. Visits between March 30-April 30, 2020. 14-question 1-5 Likert scale survey was created. Surveys were emailed with 1-week follow-up email. Visits were completed by eight sports medicine physicians that completed a 14-question survey at the end of the study.	88.8% patients were satisfied or very satisfied. 42% of patients said they preferred telehealth 75% of physicians were satisfied or very satisfied. Regression on R2 value of 0.52 suggests moderate predictability of overall satisfaction. The ability to adopt new technology and effectiveness in asking questions and the doctor answering concerns were most correlated to patient satisfaction ($p<0.0001$.) Surgeons Ratings: Overall satisfied (3.88+/- 1.25) with telehealth 42.6% +/- 32.3% of their patients needed an in-person visit for further evaluation 2.75/5.0 +/- 1.28 effectiveness to complete physical examination.	Patient satisfaction across study was higher in telemedicine than in-person visits. Limitations: Recall bias identified (survey sent after 1 week) Likert scale creates central tendency bias. Study occurred during COVID=19 and patients already consider telemedicine an appropriate response to the pandemic. No control group for comparison. Strength: Statistical significance identified and discussed. Correlation analysis explores most significant factors associated with patient satisfaction.

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