Patient Satisfaction with Telehealth During COVID-19

Margaret Holden RN, MSN, ANP-C

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This is to certify that Margaret Holden successfully disseminated their project entitled:


DNP Project Advisor
Carolyn Montgomery, PhD, ANP-C, GNP
(Required)

Committee Member 1*

Committee Member 2*

Committee Member 3*

*If applicable
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Abstract

In response to COVID-19, telehealth expansion provided access to essential health care during an unprecedented public crisis. Although telehealth has existed for decades, most providers were inexperienced with telehealth when the pandemic arrived. Previous governmental constraints were lifted, recognizing the urgency to provide care, maintain social distancing, and keep patients safe. However, the surge in telehealth brought concerns with the quality of care, patient satisfaction, and privacy. The objective of this quantitative study is to conduct a comprehensive assessment of telehealth to determine the patients’ satisfaction with the provider-patient relationship, quality of exam, efficacy in health care delivery, and overall quality of care. After obtaining IRB approval from the University of Buffalo and Westchester Medical Center, patients were recruited from the population that presented to the COVID tent at an upstate medical center, sought medical care via telehealth, and agreed to a telehealth satisfaction survey. The healthcare transformation brought about by telehealth resembles Kurt Lewin’s model of understanding behavioral change within organizations (Arora, 2021). Lewin’s theory is based on recognizing an urgent need to change, overcoming fears, creating a new reality, and stabilizing the change by incorporating some of the new policies and procedures to create a new norm. Patient satisfaction with telehealth was influenced by many factors, including travel time, convenience, access to healthcare, cost savings, clinical outcome, provider relationship, and inhibiting influences. Additional research with a larger sample will need to be done to appreciate an accurate level of patient satisfaction. A multi-pronged approach is needed to eliminate the persistent racial and socioeconomic disparities in healthcare and telehealth, exacerbated by the COVID-19 pandemic. COVID-19 has given nurse practitioners a unique opportunity to reform
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healthcare through policy and regulatory changes, under the guise of patient preference and safety, to advocate for permanent legislative changes (Stucky et al., 2020).

*Keywords: COVID-19, telehealth, patient, satisfaction, quality of care*
On March 11, 2020, healthcare as we knew it took a dramatic turn. The World Health Organization (WHO) declared COVID-19 as a global pandemic. The principal strategy adopted to contain the virus's spread, with no known treatment, was social distancing and complete lockdown of some nations (Elawady et al., 2020). Patients with non-communicable, infectious, and chronic diseases were all left without medical access. The National Health Service (NHS) rapidly adopted telemedicine as an alternative to face-to-face consultations. Telehealth helped healthcare providers (HCP) continue to give medical care while keeping patients safe. However, most healthcare providers were unfamiliar with telehealth before the pandemic. In 2016, a study reported that only 15.4% of U.S. physicians worked in practice using telemedicine to interact with patients. By January 2020, as the COVID-19 engulfed the U.S., only 24% of U.S. healthcare organizations had a telehealth program in place (Kaplan, 2020). COVID-19 prompted a universal expansion of telehealth utilization. Legislative changes helped facilitate the transition by enabling a “good faith” provision to provide medical care at a distance (Reeves et al., 2021). In March 2020, the Center for Medicare and Medicaid Services (CMS) established telemedicine payment parity with in-person visits, suspended licensure and malpractice insurance restrictions, and waived HIPAA regulations to limit barriers to Telemedicine (Ramaswamy et al., 2020). The Federal Communications Commission (FCC) established a $200 million fund for the "COVID-19 for Telehealth Program" to help healthcare providers provide connected care to patients in response to the pandemic (Yu et al., 2021).

With the upsurge of telehealth, there were concerns regarding the quality of care or service to patients. Having clear feedback from patients is crucial. This incorporates them in the telehealth
process and involves them in decision-making. Identifying areas of weakness and improving them will maintain the quality of Telehealth (Elawady et al., 2020).

**Background and Significance**

Although some telehealth technologies have existed for decades, telehealth was rarely adapted into patient care due to heavy regulation, lack of infrastructure, and known cost-effectiveness (Yu et al., 2021). In 2007, the World Health Organization (WHO) introduced a standardized definition of telemedicine: "The delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information, diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interest of advancing the health of individuals and their communities" (Doraiswamy et al., 2020). With the advent of the COVID-19 pandemic, health policies requiring face masks, social distancing, quarantine, and isolation were put into effect. An alternative way to receive healthcare was necessary. An ill-prepared workforce and patient population were thrust into telemedicine. The constraints that previously kept telemedicine from advancing were now lifted. Medicare and Medicaid Services (CMS) removed limitations of telemedicine reimbursement. Governmental discretion to not enforce penalties for Health Insurance Portability and Accountability Act (HIPAA) violations on healthcare providers using telemedicine tools in good faith to deliver care during the pandemic and avoid the burden of complex technology and program costs (Gillespie et al., 2020). The unprecedented upsurge in telehealth use brought concerns with the quality of care, patient satisfaction, and safety. Patients' knowledge, health literacy, digital fluency, capacities and disabilities, and access to care add significant perspectives to ethical, legal, and social issues (Kaplan, 2020).
Purpose and Objectives

This study aims to conduct a comprehensive assessment of telemedicine’s utility during the global pandemic and summarize its achievements, focusing on the patients’ satisfaction. In addition, it is essential to identify the limitations, find approaches to overcome them, and create a reasonable structure to successfully implement and use telehealth services (Hajesmael-Gohani & Bahaadinbelgy, 2021).

The DNP project setting is a medical center north of NYC. The population includes patients who came to the COVID tent for testing and received telemedicine care from this facility because of having no primary care doctor during the pandemic. Patients were not only from Westchester County but from the Bronx and Manhattan as well. The patients were given a survey via email to establish their satisfaction level and determine if virtual visits limit provider-patient relationship, exam quality, efficacy in health care delivery, and overall quality of care. The survey can help determine if the patient be willing to continue telemedicine for future visits. Long-term preparation must be done for any additional patient surges post-pandemic. When restrictions are lifted, there may be a re-emergence of COVID-19. Patients who have deferred medical and surgical treatment during the pandemic with now be trying to access healthcare. Through telehealth, proactive patient engagement may help healthcare systems manage these contingencies effectively (Wosik et al., 2020).

Contributions to Nurse Practice

APRNs are at the frontline of patient care and be familiar with any technology changes. Along with primary care providers, nurses should be re-trained to various telehealth platforms.
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As healthcare systems struggle with increased chronic disease patients, provider shortages, and mandatory decrease in healthcare costs, telehealth technologies emerge to these challenges and improve patient outcomes (Rutledge et al., 2017). Nurses must continue to partake in research and evidence-based projects to increase nursing knowledge. APRN's should anticipate a growing role for telehealth and will need to develop the knowledge, skills, and attitude required to provide a positive patient experience (Rutledge et al., 2017). APRNs should develop guidelines for best practices in telehealth nursing (Andrews et al., 2020). As we raced to implement virtual healthcare technologies as quickly as possible, the pace of change was unprecedented (Webster, 2020). The DNP student utilized nursing practice scholarship to explore and identify factors contributing to effective telehealth and address the clinical gap between provider-patient relationships for this project.

**DNP Essentials**

The following American Association of Colleges of Nursing (AACN, 2006) DNP Essentials were addressed in this project. Essentials I: Scientific Underpinnings for Practice: The DNP graduate prepares to use science-based and concepts to determine the nature and Significance of health and health care delivery: describe actions and advanced strategies to enhance, alleviate and facilitate health and health care delivery and evaluate outcomes. As the incidence of COVID-19 grew exponentially, it became apparent that there needed to be a way to track, monitor, and proactively treat patients. Telehealth was the answer. With the physicians and residents pulled into the hospital to treat critically ill patients, the APRNs absorbed thousands of patients from the ambulatory clinic. The implementation of telehealth helped triage and care for many patients with COVID and chronic medical conditions, preventing hospitalization (Doolittle et al., 2020). Essentials II: Organizational and systems thinking leadership for Quality
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improvement and systems thinking: The widespread adoption of telemedicine associated with the COVID-19 pandemic was unprecedented and will significantly impact future health delivery.

Due to the rapid implementation and minimal education in telemedicine, continued patient safety and satisfaction evaluation were done with surveys (Ramaswamy et al., 2020). Essentials III: Clinical Scholarship and analytic methods for evidence-based practice—Much knowledge can be learned regarding telehealth etiquette and tailoring patient-provider communication to diagnose medical needs better when a complete exam is not possible. APRNs can help design evidence-based interactions to promote safe, timely, effective patient-centered care (Reeves et al., 2020). Essentials IV: Information systems/technology and patient care technology for improvement: Itamura et al. (2020) speaks to the need for improved systems/technology to transform healthcare. Additional training of both providers and patients can improve patient satisfaction and outcomes. Technical dilemmas are not surprising due to the rapid implementation of telehealth. Therefore, there is ample opportunity for DNP evaluation of patient surveys and improvement of patient care. Essentials V: Health Care Policy for Advocacy in Healthcare: Prasad et al. (2020) suggest that specific guidelines for telehealth visits, and patient handouts in preparation of the visit, would benefit patient care. DNP graduates can design, influence, and implement new policies for advocacy in health care. Essentials VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes—APRNs can use effective communication and collaborative skills to develop and implement practices. Use the knowledge gained from the survey to create practice guidelines to improve patient outcomes. The Global Health Intelligence reviewed the penetration of Telemedicine in Latin America and compared what was learned in America to minimize the obstacles they encountered (Hincapie et al., 2020). Essentials VII: Clinical Prevention and Population Health Improving in
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Nation's Health: The surge in telehealth was done to keep patients safe and prevent COVID-19 from spreading.

When telehealth use expanded, federal guidelines were eased to provide care. We need to evaluate whether patients received optimal care and what changes can be made to continue that care at the local and national levels. Telemedicine can only be matured if government agencies, private payers, and insurance companies reimburse for care. There is evidence of governments' growing support to increase telemedicine to underserved populations (Kato-Lin & Thelon, 2020). Essentials VIII: Advanced Practice Nurse- Professional nurses will continue to be impacted by telehealth. APRNs are the frontline of patient care and must maintain their technical skills to participate in telemedicine. Nurses should develop guidelines for best practices in telehealth nursing (Andrews et al., 2020).

Theoretical Framework

In the 1940s, Kurt Lewin, "the father of psychology," proposed a model for understanding organizational behavioral change. His model consisted of 3 phases: unfreeze-change (transition)-refreeze (Arora,2021). Unfreezing, the first stage, begins with the recognition of a problem and a need for change. Creating a sense of urgency for change is part of unfreezing. Successful evolution necessitates strengthening the driving force and weakening the resistant forces (Shirey, 2013).

In March 2020, when the World Health Organization (WHO) declared COVID-19 a global pandemic, preventive strategies of isolation, quarantine, and social distancing were implemented. This represented an unprecedented challenge for health services that forced a
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modification of service modality (Hincapie et al., 2020). There was a race to implement virtual-health-care technologies as quickly as possible to provide health care to communicable, non-communicable, and chronically ill patients who now had no access to care. This reflected stage 1, unfreezing stage, in response to an urgent need. The Center of Medicare and Medicaid Services (CMS) saw the weakening of resistant forces preventing change, removing the financial barrier to clinicians providing telemedicine. Supplemental funding from the Federal Communications Commission was made available to care centers that wished to expand their virtual care. Government discretion to not enforce penalties for Health Insurance Portability and Accountability Act (HIPPA). Violations for providers using Telemedicine (Gillespie et al., 2020).

Phase 2, Lewin's theory's moving or transitioning stage, entails looking at a process change rather than an event. This stage necessitates creating a detailed plan of action and engaging people to use it. The transition stage involves coaching to overcome fears and clear communication to avoid losing sight of the desired goal, a new and improved reality (Shirey, 2013). When New York City became the epicenter for COVID in March 2020, medical centers and physicians rapidly implemented a new healthcare delivery system. Weill Cornell Internal Medicine Associates (WCIMA) developed an infrastructure for Video visits during the pandemic. Their physicians developed a handbook for their providers to assist them in the transition. Providers were encouraged to maximize video visits and only do in-person visits for critically ill patients. As a result, patients had high satisfaction rates, while providers were skeptical (Sinha et al., 2020). The implementation of telemedicine was so rapid that providers felt insecure, yet they persisted—they had to because there were no other means of connecting with patients except for telemedicine.
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Refreezing, the third stage of Lewin's theory, demands stabilizing the change, so it becomes embedded into practice and policies (Shirey, 2013). The new change produces a new norm or higher level of performance. The third stage is critical because the changes must be locked in to maintain and not revert. For telemedicine to remain an integral part of healthcare, government laws and regulations must be adjusted post-pandemic to support the system. In addition, financial barriers to patients using telemedicine must be addressed to provide adequate insurance coverage and reimbursement, unlike pre-pandemic conditions (Bokolo, 2020). Successful change is a result of the planning and implementation of a program. Lewin's model, leading change is strategic, social, and emotional, and managing change is tactical and technical (Tetef, 2017).

Literature Review

A systemic literature review was performed to explore the current literature that pertains to patient satisfaction with Telehealth during COVID-19. Databases searched included CINAHL Plus, PubMed, Google Scholar, and a general search of the University of Buffalo online library. The search limits applied to database searches included 2015-2021, full text, peer-reviewed, reference available, and English. Due to the nature of the subject in question, most articles are from 2020. Search terms included "telehealth" OR "telemedicine" OR "telecommunication" OR "virtual visits" AND "patients" OR "clients" OR "customers" AND "satisfaction" OR "dissatisfaction". The following Medical Subject Headings (MeSH) terms were utilized: medical informatics and medical technology. Duplicate articles were eliminated. Articles not about
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Patient satisfaction, COVID and telehealth, or telemedicine or virtual visits were also eliminated. The remaining 13 articles met the inclusion criteria, addressed adult patients’ satisfaction with telehealth during the COVID pandemic, and were detailed in the literature review (Table 1).

The response to telemedicine used during the COVID pandemic was overwhelmingly positive. Most notably, where the studies were done in NYC, the epicenter of the virus. Over one year encompassing 2020, 38,609 patients at Weill Cornell Medical center received video versus in-person visits. Satisfaction for video visits was 94.5% (Ramaswamy et al.,2020). In response to the pandemic, NYU Langone created virtual urgent care. In one month (March 8-April 7,2020), 17,730 patients were given virtual visits. The satisfaction rate was 4.4/5. Two studies that showed less satisfaction, but not poor results were those involving acute illness and subspecialties. Virtual visits were given to 1059 patients with acute conditions. Positivity was only 70%, citing difficulty getting a virtual visit and extended time waiting for the doctor to sign on. Only 21% intended to use telehealth in the future (Kato-Lin & Thelsen,2020). Virtual visits done with otolaryngology patients showed that 221 out of 1284 patients were dissatisfied with their care. Patients felt virtual visits did not meet their needs, and frequently there was an extended wait for providers to sign on.

In summary, telehealth has made substantial contributions to health care during the pandemic. Patient feedback through satisfaction surveys is critical to optimizing outcomes. Telehealth may have a significant role in advancing health care in the future.

Methods and Design

A closed cohort study was conducted to determine the use of telehealth during COVID-19. Thousands of patients presented to the COVID tent at Westchester Medical Center (WMC) from April, May, and June (2020) for testing and were positive. Many patients were excluded
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due to employment at WMC and contact with employee health. Two hundred ninety-six patients were evaluated by the Emergency Department physicians and engaged in telehealth with internal medicine faculty practice associated with WMC. The implementation of telehealth ensued when patients were diagnosed with COVID and had no medical provider accessible to treat them. IRB approval was obtained from U.B., NYMC, and Westchester Medical Center. The data was obtained via the Survey Monkey platform (SVMK Inc, San Mateo, CA). An electronic consent was sent by secure email, which preceded the survey (Appendix C). Identifiers were removed from the email addresses of participants, and responses went directly to survey monkey.

Demographics were collected first. The survey consisted of 34 questions, including the Telehealth Usability Questionnaire (TUQ), which evaluates telehealth usability, learnability, reliability, interface quality, and satisfaction (Appendix C). The validity of the TUQ is shown in previous studies (Parmanto et al., 2011; Yu et al., 2021). Finally, questions about COVID treatment and future use will follow.

Data collection was done exclusively via the satisfaction survey. Following the consent, the survey began with demographic questions to ensure we could measure representation in our sample, primarily because economic and health disparities may be related to demography and access to telehealth. A Likert scale (1-5) expressing a level of agreement or disagreement was used to interpret the survey results. Unable to use the previously stated analysis tools of Cronbach's coefficient, chi-square, and Spearman's rank correlation due to small sample size, a One-way Anova for correlation and an independent t-test for Significance was used.
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**Ethical Considerations**

Findings suggest that some patient groups may be particularly well-reached by telehealth, including some vulnerable groups. There appears to be a nuance in the choice between phone and video visit types. Black patients, more than white patients, choose video and telephone. Asian patients, more than whites, select phone, and whites choose video visits (Reed et al., 2020).

Telehealth can make access easier for patients with disabilities who have problems accessing in-person medical appointments before COVID. Public transportation is not available for patients to safely be picked up. Paratransit services needed to be booked 24 hours in advance and were suspended for several months during the pandemic. Rideshare options are not accessible to wheelchair users or patients with scooters or walkers. Handicapped parking at hospitals is limited, and many disabled patients require a caregiver to accompany them, which is problematic. Telehealth video conferences alleviate some of these barriers.

Some limitations of telehealth include people with intellectual or developmental disabilities that may not effectively describe their medical problems over the phone or video chat that a physician may otherwise access in person (Young & Edwards, 2020). For people with cognitive or intellectual disabilities, telehealth poses potential challenges if they have trouble using internet-based training or computer technology due to the complexity of the systems or a lack of digital literacy. Deaf patients using video interpretation for telehealth experience numerous problems. Some limitations include whether the quality of the video connection of translation services will meet the individual’s needs, whether the telehealth service itself will be accessible if the people involved will have the necessary training to operate the telehealth equipment, and whether the technology available will support the service for providers and the
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deaf patients (Young & Edwards, 2020). Despite the technological challenges of connecting patients with their providers, people with disabilities benefit from telehealth, especially in rural areas.

**Human Subject Rights**

The human subject rights are found on the IRB 502 protocol sheet. The protocol consists of an explanation of the study and why the patient was recruited. One can choose to partake or not. One can agree to participate and later change their mind without any ramifications. If partial information has already been collected from the survey, the principal investigator may ask permission to apply that to the study. One can ask questions before agreeing. The telehealth study poses no physical risks, psychological risks, privacy risks, loss of confidentiality, legal risks, social risks, and economic risks. Efforts will be made to limit the use and disclosure of any personal information, including medical records. Identifiable markers will be removed from responses to the survey. Neither the patient nor the insurance company will pay anything to participate. There will be no sharing of information. Identifiable health information will be stored in the electronic medical record, only accessed by badge and password. The Principal Investigator and Medical advisor are the only people who have access.

**Advantages and Disadvantages to Telehealth**

The most important factor and the primary reason telehealth surged during the pandemic was keeping patients safe and preventing the spread of COVID-19. Decreased travel time and convenience are two significant factors influencing satisfaction with telehealth. Patients can save money on gas and parking. They are saving money on child and eldercare. Money saved from no time missed from work. Another advantage is less time waiting for appointments.
Lack of access to telehealth was a significant contributor to patient self-efficacy. Telehealth applications can be easily used with both patients and healthcare providers to collaborate, manage, and support self-management of health remotely. Traditionally, patients were handed health information and told what medications to take. Now, patients feel empowered because they are contributing to their treatment. Patients have been found to be highly compliant with the application, use of educational material, submitting of home assessment findings, and communicating with the provider, which has led to adherence to treatment regimens (Farley, 2020).

The use of telehealth during the pandemic has allowed many people who previously had no access to behavioral health care suddenly to be in contact with a therapist. For patients in areas where help was once unavailable, technology is a way to extend and enhance treatment (Wiederhold, 2021).

In the United States, an estimated 25% of patients do not have a primary care provider or do not have complete access to one, particularly in rural areas (Polinski et al., 2015). The shortage of healthcare providers and the demand for healthcare during the pandemic made telehealth the best alternative. Telehealth provided cost savings to the health care system providing services to already saturated hospitals.

Telemedicine has proven capable of improving access for underserved populations, especially in rural areas. For certain conditions, such as heart failure, diabetes, stroke, and pregnancy, telehealth has demonstrated improved outcomes (Barbosa et al., 2021).

Some disadvantages to telehealth included poor internet connectivity, visual and clarity issues, comfort with device/software, communication issues, and privacy concerns. Telehealth brought to
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light the disparities that already existed with the low socioeconomic status, racism, disabled and elderly. The deaf population had difficulty with accommodation to receive healthcare.

Analysis and Findings

A total of 296 patients were tested at the COVID tent and used telehealth for treatment after. Patients excluded included 6 for death, fourteen for no email address, and thirty for incorrect email addresses. Two hundred forty-six letters of recruitment were sent, 24 agreed to participate in completing the survey and, of those, only nine responded.

Demographics of respondents showed 1(11%) 70-89 years of age, 5(55.56%) 50-69 years of age, and 1(11.1%) 18-29 years of age. Respondent’s place of residence showed 7(77.7%) lived in Westchester County, 1(11.1%) lived in the Bronx, and 1(11.1%) lived in Dutchess County. The level of education in the respondents showed 6(66.7%) had a master’s degree or higher. 2(22.22%) had bachelor's degrees, and 1(11.1%) had a high school education. Marital status showed married or domestic partners 5 (55.5%), Divorced 2(22.2%), and single/never married 2(22.2%).

Two sub-groups compared were telehealth total (Telehealth improves my access to healthcare; telehealth saves me time traveling to clinic or hospital; telehealth provides for my healthcare needs; the provider understood my needs; I was comfortable with telehealth; I prefer a telehealth visit instead of an in-person visit; I was overall satisfied with telehealth, and I would use telehealth again.) and telehealth tech (I could easily speak to the clinician using telehealth; I could hear the clinician clearly using telehealth; I could see the provider clearly; the interaction with the telehealth technology was pleasant; the technology was easy to access; I have everything I need to access telehealth). A one-way ANOVA was done between telehealth total
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and telehealth tech regarding age. Results between groups and within groups for telehealth total showed \( F(3,5) = 2.190, p = .208 \): for telehealth tech showed \( F(3,5) = 2.828, p = .146 \). No significance is appreciated.

A one-way ANOVA between and within groups of telehealth total and telehealth tech was done regarding education. Results between and within groups for telehealth total showed \( F(3,5) = 2.190, p = .208 \). Results between and within groups for telehealth tech regarding education showed \( F(3,5) = 2.828, p = .146 \). No significance was appreciated.

A one-way ANOVA between and within groups of telehealth total and telehealth tech was done regarding ethnicity. Results between and within groups for telehealth total showed \( F(2,6) = .836, p = .478 \). Results between and within groups for telehealth tech showed \( F(2,6) = .790, p = .496 \). No significance was appreciated.

A one-way ANOVA between and within groups of telehealth total and telehealth tech was done regarding marital status. Results between and within telehealth total showed \( F(2,6) = .2757, p = .142 \). Results between and within telehealth tech showed \( F(2,6) = .2757, p = .296 \). No significance was appreciated.

Independent Samples Test (t-test for equality of Means) showed telehealth total equal variances assumed and unassumed, MD= -6.4500. Telehealth Tech equal variances assumed and unassumed, MD= -1.000. Neither were significant (Table 2).
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Discussion

The lack of response to the patient satisfaction survey can be attributed to several reasons. The length of time removed from the COVID pandemic, delay in release of the survey due to institutional stipulations,” pandemic fatigue”, concern over jeopardizing relationship with primary doctor, and recall of a terrible time in their life, are some possible reasons.

The literature review supports patient satisfaction with the ever-evolving role of telehealth. Patients are satisfied with the convenience, cost savings due to no travel or parking costs, no child or elder care costs, no loss of work, better access for rural patients, and engagement in their medical care. Telehealth has given patients a feeling of empowerment and contribution to their healthcare. This engagement in their care has led to better compliance with medication and dietary restrictions and subsequent improved patient outcomes. Telehealth is not for everyone but some sub-specialties such as cardiology, endocrinology, neurology, and orthopedics have found great success with patient care. Telehealth has also been a lifeline for those with chronic diseases (Barbosa et al., 2021).

The COVID-19 pandemic acted as a transformation catalyst, accelerating the implementation and adoption of changes in public health intervention. A new model of health care delivery, telehealth, puts emphasis on preventive measures, remote care, and sustainable technological dependence (Jazieh & Kozlakidis, 2021). A key focus post-pandemic policy regarding telehealth utilization should be narrowing the inequalities in access to care and increasing access for minority groups. Utilization management strategies such as lifting restrictions from underserved communities, reimbursement for telephone-only visits for rural communities without broadband, and imposing frequency limitations on the number of telehealth visits for urban populations will ensure telehealth services for those with the increased need. Telehealth remains an essential part of the current healthcare infrastructure but requires
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Conscientious policy drafting to ensure that the healthcare community yields the intended benefit without widening disparities (Mahatta et al., 2021).

Long-term expansion of telehealth is further challenged by a lack of standardized reimbursement for telehealth visits. Insurance coverage of telehealth varies by state and plan and may change rapidly in response to new regulations.

Post COVID-19, a blended approach to healthcare will emerge. There will be a review of policies, guidelines, and regulations relating to individual rights and implementation of drastic health measures. The realization that technology can be implemented and work well—should constitute a benchmark and greater integration of those technologies should be part of a routine health care design (Jazieh & Kozlakidis, 2021)

Limitations

Numerous limitations were encountered during data collection and analysis that merit mention. First, there can be bias in this research study since telehealth was the only available way to access healthcare during the pandemic and patient satisfaction could be higher because of this.

Second, the minuet sample size certainly could have contributed to the lack of correlation between the data to make a significant difference. Third, it is apparent that the information acquired will not address disparities regarding socioeconomic issues, race, access for the disabled, and lack of internet access. A review of the demographics shows a clear picture of Westchester County. There are many older individuals with higher education that are not lacking in broadband access or smartphones or tablets. To appreciate the disparities in telehealth
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experienced during COVID, a much larger sample encompassing additional counties would be more appropriate. In addition, attention to limited access to the internet, access for the disabled, the deaf community, and access for low socioeconomic patients should be explored to improve telehealth in the future.

Future Implications

Telehealth is integral to the future of Advanced Practice Nursing. It is imperative that APRNs utilize telehealth technology to help alleviate some of the burdens. APRNs have the authority and decision-making power to foster telehealth initiatives that will influence patient care outcomes. For the success of telehealth for N.P.s, it is essential to understand potential legal implications and risks surrounding engagement with patients through remote technology, particularly when NPS cross geographical boundaries of their licensure, where they have no authority to practice. The pandemic has lifted some of the barriers. Still, NPS must assume leadership positions that increase awareness, advocate for streamlining the licensure process and disseminate information related to professional liability concerns and reimbursement (Fronczek & Cowen, 2019).

Conclusion

Telehealth is increasingly becoming an essential element within our health care system and an effective component in the delivery of patient care with the potential to achieve improved outcomes (Brophy, 2017). There has been a high level of satisfaction with the use of telehealth by patients and healthcare providers during the COVID-19 pandemic (Andrews et al., 2020). In
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addition, several studies supported findings of high patient satisfaction with telehealth before the pandemic (Kruse et al., 2017). The telehealth revolution in response to COVID-19 has increased essential health care during an unprecedented public health crisis. One unexpected impact of the pandemic was categorically removing the systemic barriers to telehealth and forcing clinicians to implement technology-assisted patient care modalities rapidly. Post pandemic, barriers may return, but patient preference for telehealth will remain (Finn et al., 2021).

Based on a survey by Sage Growth Partner (SGP) and Black Boo Market Research, 25% of consumer respondents had used telehealth before COVID-19, 59% reported the possible use of telehealth now than previously, and 33% would even leave their current physician for a provider who offers telehealth. According to Global Market Insights, the telemedicine market will be valued at $175.5 billion by 2026 (Forbes, 2020). Telehealth will remain an integral part of our healthcare system.
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https://www.surveymonkey.com/r/Preview/?sm=UxeuGkhOcUn5ji7sBMuUedjpWEBwdLpvMRvRAjXzH4uGpHI19cLH1_2FOCw9sk7I5o
### Table 1. Literature Review

<table>
<thead>
<tr>
<th>Citation</th>
<th>Study Purpose</th>
<th>Instrument</th>
<th>Findings</th>
<th>Implications</th>
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<tbody>
<tr>
<td>Andrews et al., 2020</td>
<td>To evaluate the satisfaction rate of patients and providers with the use of Telehealth during COVID-19</td>
<td>Survey/questionnaire</td>
<td>14/16 studies showed high rates of patient satisfaction with telehealth. 80% of patients desire to continue telehealth post-COVID</td>
<td>Telehealth will continue to evolve regardless of the pandemic, and the future is promising</td>
</tr>
<tr>
<td>Kato-Lin &amp; Thelsen 2020</td>
<td>To evaluate the outcomes of telemedicine for acute conditions</td>
<td>Patient satisfaction survey</td>
<td>One thousand fifty-nine patients responded, 81% used virtual visits for the first time. 70% had positive outcomes. However, it took approximately two days to get a virtual appointment, and there was usually a 20-minute delay waiting for the provider once signed on. Only 21% intended to use telehealth again.</td>
<td>Patients with acute conditions are less likely to use virtual visits</td>
</tr>
<tr>
<td>Elawady et al., 2020</td>
<td>To evaluate the use of telephone consultation in clinics by healthcare professionals, assessing the implementation, challenges, and drawbacks</td>
<td>Survey/survey monkey</td>
<td>One hundred fourteen health care providers were surveyed. 70% agreed video consults were better than telephone consults. Patient satisfaction for both telephone and video consults was 60%.</td>
<td>Patients and providers believe with additional technical training and telemedicine satisfaction will improve</td>
</tr>
<tr>
<td>Ramaswamy et al., 2020</td>
<td>NYC epicenter for COVID to evaluate patient satisfaction during the rapid shift to telemedicine</td>
<td>Press-Gainey patient satisfaction survey for video versus in-patient visits</td>
<td>Thirty-eight thousand six hundred nine patients were given the survey (normal video visits are 620 per year). Video visits versus in-patient (94.9% vs 92.5%: P&lt;.001).</td>
<td>Patient satisfaction with video visits is high and is not a barrier toward a paradigm shift away from in-person visits.</td>
</tr>
<tr>
<td>Citation</td>
<td>Study Purpose</td>
<td>Instrument</td>
<td>Findings</td>
<td>Implications</td>
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<tr>
<td>Reeves et al., 2021</td>
<td>To measure the safety of video visits vs. in-person visits</td>
<td>Questionnaire/survey</td>
<td>Patients felt they received adequate care from the video visit. Providers felt there was room for improvement using telehealth.</td>
<td>Telehealth made substantial contributions to health care during the pandemic. Patient feedback can help optimize outcomes.</td>
</tr>
<tr>
<td>Gillespie et al., 2020</td>
<td>To highlight the need for the rapid utility of telemedicine in nursing homes</td>
<td>Editorial on the need to expedite telehealth procedures in long-term nursing facilities</td>
<td>Many seniors died in nursing homes in NYC due to a lack of telehealth services</td>
<td>Changes in rules for telehealth and reimbursement for long term facilities</td>
</tr>
<tr>
<td>Rutledge et al., 2017</td>
<td>Literature review of programs to address nurse practitioners training in telehealth</td>
<td>Systemic review</td>
<td>The review suggests a shortage of health professional programs that integrate telehealth. Not only does there need to be a parity in physician reimbursement, but for nurse practitioner reimbursement.</td>
<td>Nurse practitioners can effectively participate in the transformation of healthcare through their roles in clinical practice. To prepare nurse practitioners for their role as advocates, they must be trained in telehealth.</td>
</tr>
<tr>
<td>Doraisway et al., 2020</td>
<td>A scoping review of 543 articles in the first six months of the pandemic</td>
<td>Systemic review</td>
<td>Telehealth was broadly used during COVID-19 for surveillance, triage, diagnosis, and treatment. Telehealth was used for non-communicable and infectious diseases. Telehealth was used for medical education.</td>
<td>Telehealth may have a significant role in advancing health care in the future. Global consensus on definitions, boundaries, protocols, evaluation, and data privacy is needed.</td>
</tr>
<tr>
<td>Citation</td>
<td>Study Purpose</td>
<td>Instrument</td>
<td>Findings</td>
<td>Implications</td>
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<tr>
<td>Polinski et al., 2015</td>
<td>To assess patient satisfaction and preference with telehealth</td>
<td>Patient satisfaction survey</td>
<td>1734 patients participated in a Minute clinic telehealth visit, 95% were very satisfied with the quality and rated telehealth as good as or better than in-person visits</td>
<td>Telehealth may be an excellent alternative to patients having difficulty assessing timely, convenient care</td>
</tr>
<tr>
<td>Wosik et al., 2020</td>
<td>To describe the role that telehealth played in transforming healthcare delivery during the 3 phases of COVID-19</td>
<td>Perspective study</td>
<td>Three phases of telehealth include: outpatient care during a stay-at-home orders-telehealth services-maintained access and continuity of medical care while preventing the spread of COVID. 2) Inpatient COVID-related surge—Telehealth met the demands of in-patient care while reducing transmission and allowing pulmonologists, respiratory therapists, and nurses the ability to evaluate patients. 3) Post-COVID recovery—When restrictions are lifted, the re-emergence of COVID cases will again need telehealth. Also, patients that have delayed care for one year will be looking for nonurgent care.</td>
<td>The COVID-19 pandemic forced healthcare systems, hospitals, and clinics to implement telehealth rapidly. The reality is virtual care is here to stay. To further improve patient outcomes, someone must do a full assessment of strengths and weaknesses.</td>
</tr>
<tr>
<td>Yu et al., 2020</td>
<td>Evaluation and feedback for telehealth patients and providers</td>
<td>Patient and provider survey</td>
<td>50 patients and 45 providers were given a satisfaction survey. 42/50 (84%) patients were very satisfied with telehealth visits, were likely to continue telehealth, felt their health needs were addressed, and had no difficulty using the technology. Only 48% of providers were satisfied with Telehealth c/o technical difficulties and loss of patient-provider relationships.</td>
<td>A larger population to verify patient satisfaction is needed. Subject studies need to be done to determine provider dissatisfaction.</td>
</tr>
<tr>
<td>Hincapie et al., 2020</td>
<td>Identify and summarize the available literature related to the accelerated use of Telehealth during COVID-19</td>
<td>Cross-sectional study</td>
<td>43 studies that reported telemedicine implementation and experience all had positive evaluations and felt telemedicine was useful</td>
<td>The COVID pandemic will be a landmark for telemedicine history. To ensure maximum impact and proper functioning, telemedicine must be fully...</td>
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</table>
## Patient Satisfaction with Telehealth During COVID-19

<table>
<thead>
<tr>
<th>Citation</th>
<th>Study Purpose</th>
<th>Instrument</th>
<th>Findings</th>
<th>Implications</th>
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</thead>
<tbody>
<tr>
<td>Sinha et al., 2020</td>
<td>To describe the implementation and evaluation of a video-visit program at a large primary care center in NYC epicenter during COVID-19</td>
<td>Patient satisfaction survey</td>
<td>Satisfaction data was collected from 113 of 817 patients. Satisfaction rated 4.5/5 and willingness to use again was 49%.</td>
<td>Future use of telehealth depends on the utilization of providers and the new policies for reimbursement post-pandemic.</td>
</tr>
<tr>
<td>Koziatek et al., 2020</td>
<td>To evaluate the effect of virtual urgent care visits from March 8-April 7,2020 in the NYC epicenter</td>
<td>Voluntary patient satisfaction survey</td>
<td>During the one month, 17,730 patients were given virtual urgent care visits. Average satisfaction was 4.4/5</td>
<td>Video visits can treat large numbers of patients, lessen unnecessary in-person visits, provide a high degree of patient satisfaction while maintaining social distancing.</td>
</tr>
<tr>
<td>Hajesmaeel-Gohari and Bahaadinbeigy, 2021</td>
<td>Review which questionnaires are best used to evaluate telemedicine</td>
<td>Scoping review</td>
<td>Ten questionnaires to evaluate telehealth: TUQ, TSQ, SUTAQ, CSQ, QUIS, SUS, PSQ TSUQ, PACT, PSSUQ, TAM</td>
<td>User satisfaction with telemedicine and the system's usability are the two most frequently investigated issues in telemedicine.</td>
</tr>
<tr>
<td>Citation</td>
<td>Study Purpose</td>
<td>Instrument</td>
<td>Findings</td>
<td>Implications</td>
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<tr>
<td>Itamura et al.,</td>
<td>To compare the patient experience of virtual otolaryngology versus in-patient</td>
<td>Patient satisfaction survey</td>
<td>1284 in-person surveys, 221 virtual surveys showed poor satisfaction</td>
<td>Providers need to address technical challenges to improve patient care</td>
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<tr>
<td>2020</td>
<td></td>
<td></td>
<td>with virtual visits regarding difficulty communicating and long wait time</td>
<td></td>
</tr>
<tr>
<td>Roof et al.,</td>
<td>To report patient experience with telehealth</td>
<td>Patient satisfaction survey</td>
<td>261 patients surveyed at a radiation oncology clinic, satisfaction was</td>
<td>Telehealth has served as a great tool to keep oncology patients safe during the pandemic. Patients are insecure about using it indefinitely</td>
</tr>
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<td>2020</td>
<td></td>
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<td>98.55, quality of visit 91%, confidence in the doctor 99%, supported</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>during visit 99% and willingness to use again 50%</td>
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<tr>
<td>Kruse et al.,</td>
<td>To explore the association of telehealth and patient satisfaction in regard to</td>
<td>Systemic literature review</td>
<td>Forty-four studies evaluated, 24 patients reported positive effectiveness, six reported satisfactions, and 14 said both.</td>
<td>Telehealth can provide high-quality service, increase access to care, improve communication and patient outcomes, and is a low cost</td>
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<td>2017</td>
<td>efficiency</td>
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<td>Equal</td>
<td>Mean Difference</td>
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<td>Variances assumed</td>
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<td>Telehealth Total</td>
<td>.254</td>
<td>-6.4500 *</td>
<td></td>
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<td></td>
<td>.275</td>
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<td>Equal variances</td>
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<td>not assumed</td>
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<tr>
<td>Telehealth Tech</td>
<td>.321</td>
<td>-1.0000 *</td>
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<tr>
<td></td>
<td>.334</td>
<td>-1.0000</td>
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</tbody>
</table>

*=no significance

Table 2

Independent t-test

Independent t-test

$t$-test for equality of means

Significance

One-sided $p$   Two-sided $p$   Mean Difference

Total Equal Variances assumed .254 .508 -6.4500 *

Equal variances not assumed .275 .550 -6.4500

Telehealth Equal Variances assumed .321 .642 -1.0000 *

Equal Variances not assumed .334 .667 -1.0000

* = no significance

Patient Satisfaction with Telehealth During COVID-19
Appendix A

Stakeholder/Community Partner Letter of Support for DNP Project

Date: 4/16/2021

Re: Letter of Support

To Dr. Carolyn Montgomery:

It is my pleasure to write a letter in support of the proposed Doctor of Nursing Practice (DNP) project, Patient Satisfaction with Telehealth during COVID-19, being submitted to the University at Buffalo Institutional Review Board and Westchester Medical Center Institutional Review Board by Margaret Holden.

Following the World Health Organization declaring COVID-19 a global pandemic, there was a huge influx of patients to the COVID tent at Westchester Medical Center. Many patients needed medical care and subsequently received care from WMC Health Advanced Physicians via telehealth. The aim of the project is to evaluate the level and patient satisfaction with telehealth, care that was provided, compatibility to in-person visits and preference for future use.

I am happy to assist the student, if necessary, through our institutional IRB and with providing the student the necessary resources in order to complete the project at our institution (i.e., HIPAA compliant access to charts, patients, caregivers, etc.).

In conclusion, I fully support the project as proposed by Margaret Holden and agree to allow the study to be conducted at Westchester Medical Center.

Sincerely,

Carol L. Karmew, MD
Title MD

[Signature]
Appendix B

Notification of Approval

To: Margaret Holden

Link: STUDY00005489

P.I.: Margaret Holden

Title: Patient satisfaction with telehealth

This submission has been approved. You can access the correspondence letter using the following link:

Description: Correspondence_for_STUDY00005489.pdf(0.01)

To review additional details, click the link above to access the project workspace.

Confidentiality Notice

The information contained in and/or attached to this email message may be confidential. If you are not the intended or authorized recipient, you are hereby notified that any unauthorized distribution, dissemination, or copying of this transmission is prohibited. If you have received this transmission in error, please contact the sender immediately and destroy all copies.
Appendix C

Modification approval

Notification of Approval

To: Margaret Holden

Link: MOD00009437

P.I.: Margaret Holden

Title: Patient satisfaction with telehealth

This submission has been approved. You can access the correspondence letter using the following link:

Description: Correspondence_for_MOD00009437_Margaret Holden.pdf

To review additional details, click the link above to access the project workspace.

Confidentiality Notice

The information contained in and/or attached to this email message may be confidential. If you are not the intended or authorized recipient, you are hereby notified that any unauthorized distribution, dissemination, or copying of this transmission is prohibited. If you have received this transmission in error, please contact the sender immediately and destroy all copies.
Appendix D

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NYMC IRB Approval Notification

To: Margaret Holden
From: Cassandra Cartagena, Administrative Assistant
Subject: Protocol #14615
Date: 08/31/2021

The protocol Patient Satisfaction with Telehealth During COVID-19, Westchester Medical Center, 14615 has been approved by the New York Medical College IRB under the Code of Federal Regulations on 08/11/2021 under (7) Research on individual or group characteristics or behavior. The following items associated with this protocol have been approved:

- **Surveys/Questionnaires**: 08/31/2021 telehealth survey final.pdf
- **HIPAA Authorization Form**: 06/11/2021 HIPAA_1Jan2020_LOCKED reformat.docx
- **Approved Consent Form**: 08/31/2021 Consent for NYMC 2.pdf

This email constitutes New York Medical College approval to initiate the referenced study. Permission to start has been granted.

Please note that changes to your protocol may affect its approval status. Please contact the IRB directly to discuss any changes you may contemplate.

The approval of your study is valid through **08/10/2022**, by which time you must submit an annual report either closing the protocol or requesting permission to continue the protocol for another year. Please submit your information by **06/29/2022** so that the IRB has time to review and approve your report if you wish to continue it for another year.

Sincerely,

Cassandra Cartagena
Administrative Assistant
New York Medical College
40 Sunshine Cottage Rd.
Valhalla, NY 10595
(914) 594-2590
[www.nymc.edu](http://www.nymc.edu)
WMC ACKNOWLEDGEMENT LETTER

THIS IS NOT AN APPROVAL TO START YOUR STUDY

To: Carol Lynn Karmen, MD
    Margaret Holden
    Department of Medicine

From: Deborah Viola, PhD Deborah Viola
      Vice President
      Clinical Research Center

For: Joshua Ratner, MPA
      EVP, Chief Strategy Officer

Date: August 30, 2021

Protocol: Patient Satisfaction with Telehealth During COVID-19. IRB #14615

ACTION OF THE MEDICAL EXECUTIVE COMMITTEE

Approved [x] Disapproved [ ] Date: 08/12/2021

CONDITION(S):

1. IRB’s Permission to Start letter.
   o No study may begin unless the Institutional Review Board (IRB) of record released their Permission to Start Letter.
   o This WMC Acknowledgement Letter does not constitute a permission to begin the study or enroll subjects.

2. PowerTrials.
   o Effective October 17th, 2020, all interventional studies must be recorded and subject enrollment tracked in the MyCare PowerTrials application (Cerner).

3. Obtaining medical records for research purposes.
   o A request for medical records for research purposes must be made through the Health Information Management Department (HIM), per HIM’s process. Study personnel is not permitted to directly access WMC patient’s medical records (electronic or paper) for research purposes.
   o NYMC students requesting access to WMC medical records must obtain a formal approval from Dr. Fredrick Bierman (Fredrick.Bierman@wmchealth.org, Graduate Medical Education).

4. Data retention.
   o Research records must be retained for a minimum of 7 years after final reporting or publication of data, as per WMC Policy A-RES-HW-003, Conduct of Clinical Research.
Appendix F

Modification Approval

<table>
<thead>
<tr>
<th>NYMC IRB</th>
<th>Amendment Approval Notification</th>
</tr>
</thead>
</table>

To: Margaret Holden

From: Cassandra Cartagena, Administrative Assistant

Subject: Protocol #14615

Date: 09/10/2021

The amendment to add Catherine Donlon to protocol Patient Satisfaction with Telehealth During COVID-19 was approved by the IRB on 09/10/2021.

Please contact the IRB with questions.

Cassandra Cartagena

Administrative Assistant

New York Medical College

40 Sunshine Cottage Rd.

Valhalla, NY 10595

(914) 594-2590

www.nymc.edu
Appendix G

Recruitment Letter

Dear (Patient Name),

Thank you for choosing APS Internal Medicine for your health care needs. As you may know, I am the Medical Director for the Internal Medicine practice for APS Physicians at Westchester Medical Center. I am aware that you were referred to our Internal Medicine practice for treatment after testing positive for COVID-19 at the testing tent at our hospital. We are hoping to learn more about your experience. Ms. Margaret Holden, a Nurse Practitioner at Westchester Medical Center, is conducting a survey, as part of her doctoral study, to evaluate your telehealth experience. Please respond to this email if you wish to participate. Ms. Holden will then be contacting you to ask for your consent to complete a survey along with a copy of the survey. I hope you will take a few minutes to complete the survey. Your answers will be kept confidential. Your medical care will not be affected in any way by your participation in this project.

It has been our privilege to assist you during this most difficult time. If you have any questions at all, please do not hesitate to contact us.

Carol L. Karmen, MD, FACP
Patient satisfaction with telehealth during COVID
Consent Page 1 Thank you for reading the next few pages outlining the detailed consent.
Permission to Take Part in a Human Research Study

Office of Research Compliance | Clinical and Translational Research Center Room 5018 875
Ellicott St. | Buffalo, NY 14203

UB Federal wide Assurance ID#: FWA00008824

Adult Consent to Participate in a Research Study

Title of research study: Patient satisfaction with telehealth during Covid-19 pandemic

Investigator: Margaret Holden ANP, DNP-student

Key Information: The following is a short summary of this study to help you decide whether or not to be a part of this study. More detailed information is listed later on in this form.

Why am I being invited to take part in a research study?

You are being invited to take part in a research study because you are at least 18 years old, can read and understand English, and may be interested in taking part in the proposed research study. In addition, you are invited because you currently do not have active psychosis, presence of significant cognitive impairment, and presence of other impairments that would interfere with
informed consent and the ability to answer study questions. The last three are part of the exclusion criteria for this study.

What should I know about a research study?

• Someone will explain this research study to you.

• Whether or not you take part is up to you.

• You can choose not to take part.

• You can agree to take part and later change your mind.

• Your decision will not be held against you.

• You can ask all the questions you want before you decide.

Why is this research being done?

This study focuses on assessing the use of telehealth in the context of the Covid-19 pandemic, along with a few other relevant variables (discussed below). We hope to gain better insight into various predictors to improve telehealth.

How long will the research last, and what will I need to do?

We expect that you will be in this research study for about 15 minutes. You will be asked to indicate your responses to certain questions online and type responses to some questions. Your
Patient Satisfaction with Telehealth During COVID-19

responses will be anonymous (your name or other personal information such as your phone number or email I.D. will not appear with your responses).

More detailed information about the study procedures can be found under "What happens if I say yes, I want to be in this research?"

Consent Page 2

Permission to Take Part in a Human Research Study

Is there any way being in this study could be bad for me?

There will be questions regarding your experience with COVID-19 that may result in some emotional distress. You may leave the study at any time if necessary.

Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits to you and others include a better understanding of the impact of Covid-19 on telehealth and how we can improve patient care.

What happens if I do not want to be in this research?

Participation in research is completely voluntary. You may choose not to enroll in this study.

Detailed Information: The following is more detailed information about this study in addition to the information listed above.
Who can I talk to?

If you have questions, concerns, or complaints or think the research has hurt you, talk to the research team at mholden2@buffalo.edu. You may also contact the research participant advocate at 716-888-4845 or researchadvocate@buffalo.edu.

This research has been reviewed and approved by an Institutional Review Board ("IRB"). An IRB is a committee that provides ethical and regulatory oversight of research that involves human subjects. You may talk to them at (716) 888-4888 or email ub-irb@buffalo.edu if:

• You have questions about your rights as a participant in this research

• Your questions, concerns, or complaints are not being answered by the research team. • You cannot reach the research team.

• You want to talk to someone besides the research team.

• You want to get information or provide input about this research.

How many people will be studied?

We expect about 296 people will be in this research study.

What happens if I say yes, I want to be in this research?
Patient Satisfaction with Telehealth During COVID-19

- During this 15-minute study, you will complete several questionnaires by selecting response options about your experiences in the context of the COVID-19 pandemic.

- You will be asked about topics such as previous illnesses and why you needed telehealth during COVID-19.

- All your responses will be anonymous; we will not link any data to your name. These data will be stored electronically on password-protected computers of the principal investigator for five years. Only members of the research team will have access to this information.

- You will need to have a computer/phone or such devices and internet to complete the study.

What happens if I say yes, but I change my mind later?

You can leave the research at any time, and it will not be held against you; you do not need to justify why you would like to withdraw from the study. We will store the data that you have completed.

Consent Page 3

Permission to Take Part in a Human Research Study

Is there any way being in this study could be bad for me? (Detailed Risks)

There are no known physical, psychological, legal, social, or economic risks associated with this study. However, if you wish, you may end your participation in the study.

What happens to the information collected for the research?

Efforts will be made to limit the use and disclosure of your personal information, including research study and medical or education records, to people who have a need to review this
Patient Satisfaction with Telehealth During COVID-19

information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the Institutional Review Board and other representatives of this organization.

The anonymous data collected from you will be coded and grouped with other participants’ data. We may publish the results of this research. We do not collect any identifiable information, such as your name.

Who is paying for this research?

This research is not funded by any institutions or individuals. Therefore, we will not be paying participants for this study.

1. Please select your response by clicking on the following options:
   - YES, I agree to participate in this study
   - NO, I do not agree to participate in this study.
Appendix I

Telehealth Survey

Demographics (questions 2-6), usability (7-13), satisfaction (14-18), reliability (19-25)
COVID questions (26-34)

2. What is your current age?
   18-29yrs
   30-49yrs
   50-69yrs
   70-89yrs
   90+

3. Where do you live?
   Westchester County
   Bronx
   Brooklyn
   Manhattan
   Queens
   Staten Island
   Rockland County
   Orange County
   Dutchess County
   Sullivan County
   other

4. What is your level of education?
Some High School
High School
Bachelor’s degree
Master’s Degree
Ph.D. or higher
Trade School
I prefer not to answer.

5. What is your ethnicity?
Caucasian
African American
Latino or Hispanic
Asian
Native American
Native Hawaiian or Pacific Island
Two or more
other
Prefer not to answer.

6. What is your marital status?
Single, never married.
Married or domestic partner
Divorced
Separated
Prefer not to answer.

7. Telehealth improves my access to healthcare services
Strongly agree.
Agree
Neither agree nor disagree
Disagree
Strongly disagree
8. *Telehealth saves me time traveling to the hospital or clinic*
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

9. *Telehealth provides for my healthcare needs*
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

10. *I could easily speak to the clinician using a telehealth system*
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree

11. *I could hear the clinician clearly using telehealth.*
    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree

12. *I could see the provider clearly during the telehealth visit*
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
13. *I could talk to the clinician easily using telehealth?*
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

14. *I think the visits provided over the telehealth system are as effective as in-person visits*
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

15. *The technology was easy to access*
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

16. *The interaction with telehealth technology was pleasant?*
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

17. *I have everything I need to participate in telehealth.*
   - Strongly agree
18. *I enjoy using telehealth*

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

19. *I was comfortable with the telehealth patient-assisted exam that was done*

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

20. *The provider understood my medical complaints*

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

21. *I would prefer a telehealth visit rather than waiting for a face-to-face appointment with the same doctor*

- Strongly agree
- Agree
- Neither agree nor disagree
22. I would prefer a face-to-face visit with the specialist rather than a telehealth visit with a specialist.

   Strongly agree
   Agree
   Neither agree nor disagree
   Disagree
   Strongly disagree

23. I would use telehealth services again

   Strongly agree
   Agree
   Neither agree nor disagree
   Disagree
   Strongly disagree

24. Overall, I am satisfied with this telehealth system

   Strongly agree
   Agree
   Neither agree nor disagree
   Disagree
   Strongly disagree

25. Did you feel your privacy was respected during telehealth?

   Strongly agree
   Agree
   Disagree
   Strongly disagree

26. Why did you seek testing at the COVID tent?

   symptoms, illness
exposure to COVID + person
recent travel
need to know COVID status
Members of household currently ill

27. Do you feel your access to telehealth helped you during the COVID pandemic?
   Strongly agree
   Agree
   Neither agree nor disagree
   Disagree
   Strongly disagree

28. It was relatively easy to get a virtual appointment or telephone consult during COVID-19?
   Strongly agree
   Agree
   Neither agree nor disagree
   Disagree
   Strongly disagree

29. Did you have a primary care doctor when you came to get tested at the COVID tent?
   Yes
   No

30. Were you hospitalized for your COVID-related symptoms?
   Yes
   No

31. Does or did your job put you at risk for COVID exposure?
   Yes
   No
32. How many telehealth visits did you require for your diagnosis of COVID?
   0-1
   2-3
   4-5
   5+

33. Do you currently suffer from other illnesses?
   Diabetes
   Heart disease or heart failure
   Hypertension
   Stroke or TIA
   COPD
   Asthma
   Renal disease
   Autoimmune disease
   Other

34. Do you have any residual symptoms from COVID that could be addressed with telehealth?
   Yes
   No
### Appendix J

Usability Components and Questionnaire Items and Their Source

<table>
<thead>
<tr>
<th>Components</th>
<th>Questionnaire Items</th>
<th>TAM</th>
<th>TQ</th>
<th>PSSUQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usefulness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Telehealth improves my access to healthcare services</td>
<td>S</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Telehealth saves me time traveling to a hospital or specialist clinic</td>
<td>S</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Telehealth provides for my healthcare needs</td>
<td>S</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td><strong>Ease of Use and Learnability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>It was simple to use this system</td>
<td>Y</td>
<td>S</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>It was easy to learn to use the system</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I believe I could become productive quickly using this system</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td><strong>Interface Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>The way I interact with this system is pleasant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I like using the system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The system is simple and easy to understand</td>
<td>S</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>This system can do everything I would want it to be able to do</td>
<td>S</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I could easily talk to the clinician using the telehealth system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I could hear the clinician clearly using the telehealth system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I felt I was able to express myself effectively</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Using the telehealth system, I could see the clinician as well as if we met in person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reliability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I think the visits provided over the telehealth system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Components</td>
<td>Questionnaire Items</td>
<td>TAM</td>
<td>TQ</td>
<td>PSSUQ</td>
</tr>
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<td>------------</td>
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<tr>
<td></td>
<td>are the same as in-person visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Whenever I made a mistake using the system, I could recover easily and quickly.</td>
<td>S</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The system gave error messages that clearly told me how to fix problems.</td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Satisfaction and Future Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I feel comfortable communicating with the clinician using the telehealth system</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Telehealth is an acceptable way to receive healthcare services</td>
<td>S</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>I would use telehealth services again</td>
<td></td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>Overall, I am satisfied with this telehealth system.</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
Patient Satisfaction with Telehealth During COVID-19

Introduction


To control the virus, hospitals, some in-person treatments, some distancing, isolation, and contact with a low number of coronavirus infected.

Patients often stranded, remote services and chronic disease were left without access to medical care.

COVID-19 expedited the expansion of telemedicine adoption. Legislative changes expedited the transfer of medical care as it was previously identified.

The Centers for Medicare and Medicaid Services (CMS) established telemedicine payments with in-person visits, suspended licensed, and regulatory insurance restrictions, and waived HIPAA regulations to facilitate telemedicine services.

The Patient Communication Commission (PCC) established a $300 million fund for COVID-19 for telemedicine "High-risk" to many healthcare providers, priority, connected care to patients, in particular, the elderly.

Background and Significance

Telehealth technologies existed for decades but were eroded due to heavy regulations, lack of infrastructure, and lack of proven cost-effectiveness (Smith et al., 2017).

As January 2020, as COVID-19 began to spread, the U.S. healthcare providers had telehealth protocols in place (2020).

As healthcare services were needed, limitations to telehealth reimbursement to improve telehealth.

Government desires to not exclude patients for telehealth reimbursement, making it a safe and effective tool.

COVID-19 focused on the patient and born the forces of telemedicine technology, and patient-provider live chat (2020).

11/9/2021
Patient Satisfaction with Telehealth During COVID-19

Purpose, Aim, and Objectives
- DNP project question: Were patients satisfied with the use of telehealth during the COVID-19 pandemic?
- Project Aim: The aim of this study is to conduct a comprehensive assessment of telehealth's impact during the global pandemic and summarize its achievements, with focus on patient satisfaction.
- Project Objectives:
  - To survey patients who were diagnosed with COVID-19 and used telehealth for care during the pandemic to establish their level of satisfaction.
  - To determine if health visits were comparable to in-person visits.
  - To determine if(Va) telehealth visits provided a positive patient relationship, quality of care, efficacy in health care delivery, and overall quality of care.
  - To determine if patients will continue to use telehealth in the future.

DNP Essentials
- Essential I: Organizational and systems thinking leadership for quality improvement initiatives
- Essential II: Clinical Scholarship and Academic Methods for evidence-based practice
- Essential III: Information Systems/Technology and technology for improvement
- Essential IV: Health Care Policy and Advocacy in Healthcare
- Essential V: Interprofessional Collaboration for improving patient and Population outcomes
- Essential VI: Clinical prevention and Population Health improving in factors health
- Essential VII: Advance Practice Nurses

Theoretical Framework
Levin's Conceptual Model

Contribution to Nurse Practice
- APNs use of the fundamentals of administration and must be familiar with these technologies.
- Telehealth technology is emerging as an answer to the needs of older adults.
- Nurses are expected to increase the technology.
- APNs should develop guidelines for best practice.
- APNs should be aware of the advancements to explore and identify factors contributing to effective telehealth and address the clinical gap between provider-patient satisfaction.
Patient Satisfaction with Telehealth During COVID-19

9

66

Patient satisfaction with telehealth during COVID-19 is an important area of research. This review aims to summarize the literature on patient satisfaction with telehealth services during the COVID-19 pandemic.

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Method and Design

- A descriptive study on the effects of the COVID-19 pandemic on patient satisfaction with telehealth services.
- Participants were recruited from a variety of telehealth service providers across the United States.
- Data was collected using a standardized questionnaire administered via online survey.

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Literature Review

Patient satisfaction with telehealth during COVID-19 has been shown to be influenced by various factors. These include:

- Trust in telehealth services
- Access to technology
- Patient demographics
- Overall satisfaction with healthcare services

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Conclusions

The findings from this study highlight the need for further research on patient satisfaction with telehealth during the COVID-19 pandemic. This will help identify areas for improvement in telehealth service delivery.
Patient Satisfaction with Telehealth During COVID-19

Data Collection and Analysis
- Technical issues can occur easily.
- Higher costs for virtual vs. in-person visits.
- Lack of rapport can negatively impact health outcomes.
- Need for larger sample size for accurate representation of the sample.
- Higher baseline temperatures may exist in virtual visits.
- Higher adherence to safety protocols in virtual visits.
- Higher patient satisfaction with virtual visits.

Human Subject Rights
- Participants can decline participation at any time.
- Consent can be obtained via video call/study.
- Study consent form will be reviewed prior to participation.

Ethical Considerations
- Transparency and informed consent are essential.
- Ethical guidelines for telehealth must be followed.
- Participants' privacy and confidentiality must be respected.
- Consent forms must be obtained prior to telehealth visits.
- Continuity of care is important for patient satisfaction.

Two-tailed groups compared were telehealth visits. Telehealth visits were more likely to be shorter and required less paperwork. The provider understood my needs, I was comfortable with telehealth, and I prefer telehealth visits instead of an in-person visit. I was overall satisfied with telehealth and would use it again in the future. A new study on the relationship between telehealth and satisfaction with treatment showed statistically significant results. The study was conducted by a team of researchers from X University.
Patient Satisfaction with Telehealth During COVID-19

A trend may be the group of telehealth technology use for telemedicine.

Results between and within groups for telehealth technology use were shown.

Results between and within groups for telehealth technology use were shown.

Results between and within groups for telehealth technology use were shown.

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Results between and within groups for telehealth technology use were shown.

Results between and within groups for telehealth technology use were shown.

Discussion

- The lack of response in the patient satisfaction survey may be related to overall nausea. The length of time response
- Results between and within groups for telehealth technology use were shown.
- Results between and within groups for telehealth technology use were shown.
- Results between and within groups for telehealth technology use were shown.
- Results between and within groups for telehealth technology use were shown.

Limitations

- Pain may be the group of telehealth technology use for telemedicine.
- Results between and within groups for telehealth technology use were shown.
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- Results between and within groups for telehealth technology use were shown.
Conclusion

- Patient satisfaction with telehealth during COVID-19 is essential to improve the healthcare system and ensure patient care.
- Patient satisfaction is an important factor in determining the success of telehealth programs.
- Patient satisfaction can be analyzed using various methods, such as surveys and interviews.
- Patient satisfaction is positively correlated with the success of telehealth programs.

References

Patient Satisfaction with Telehealth During COVID-19
Patient Satisfaction with Telehealth During COVID-19

Literature Review

Methods & Design

- Critical control study in which outcomes of a selected population are identified. These outcomes may or may not be applied to clinical settings to influence the probability of adoption.

- Systematic review of studies published in peer-reviewed journals.

- Inclusion criteria for control studies included: patients with COVID-19, telemedicine, and satisfaction.

- Exclusion criteria for control studies included: patients with non-COVID-19, non-telemedicine, or non-satisfaction.

- Data collection included standardized questionnaires and follow-up interviews.

- Data analysis included descriptive statistics and regression analysis.

Method and Design

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Financial support was provided by the National Institutes of Health (NIH) and the American Telemedicine Association (ATA).
Patient Satisfaction with Telehealth During COVID-19

Purpose, Aims, and Objectives

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- Project Objectives:
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  - To determine if health outcomes were comparable.
  - To determine if virtual visits limited provider-patient relationship quality and effect in physical delivery and overall quality of care.
  - To determine if patients will continue to use telehealth in the future.

DNP Essentials

- Essential I: Organizational and systems thinking for quality improvement systems
- Essential II: Clinical Scholarship and Analytic Methods for evidence-based practice
- Essential III: Information systems technology and technology for improvement
- Essential IV: Health Care Policy and Advocacy in Healthcare
- Essential V: Interprofessional Collaboration for improving patient and population outcomes
- Essential VI: Clinical prevention and Public Health improvement in National Health
- Essential VII: Advanced Practice Nursing
- Essential VIII: Expertise Leadership

Envisioning an enhancing telehealth as part of the health care system to address many of the challenges in the APN's role of leadership to move to creating new policies and guidelines, technical training for providers and patients, educate patients on how to use telehealth services, continue to survey patients for quality improvement, address all ethical concerns and share what is learned with other organizations to promote mental health.

Contributions to Novel Practice

- APRNs use of the facilitation of advancements and must be prepared with new technologies.
- Telehealth technology is emerging as an issue for the challenges of increased price and access to health care providers, increased burden of patients and need for decreased in healthcare costs.
- APRNs should anticipate a growing role for their role in providing virtual services and have the knowledge to provide services to meet patient needs. (Fitzgerald et al., 2010)
- APRNs should monitor guidelines for provider roles and eligibility (Fitzgerald et al., 2010)
- DNP student should utilize nursing practice scholarship to explore and identify factors contributing to effective telehealth and address the clinical gap between provider-patient relationships.

Theoretical Framework

Lewin's Conceptual Model

- Influence
- Change
- Reform