



Summer 8-2021

Telehealth Assessment in the Elderly Using the 4M's

Witeh Esoe

UND, witeh.esoe@ndus.edu

[How does access to this work benefit you? Let us know!](#)

Follow this and additional works at: <https://commons.und.edu/nurs-capstones>



Part of the [Nursing Commons](#)

Recommended Citation

Esoe, Witeh, "Telehealth Assessment in the Elderly Using the 4M's" (2021). *Nursing Capstones*. 325.
<https://commons.und.edu/nurs-capstones/325>

This Capstone is brought to you for free and open access by the Department of Nursing at UND Scholarly Commons. It has been accepted for inclusion in Nursing Capstones by an authorized administrator of UND Scholarly Commons. For more information, please contact und.common@library.und.edu.

Telehealth Assessment in the Elderly Using the 4M's

Witeh Esoe

College of Nursing and Professional Disciplines, University of North Dakota

NURS 609: DNP Project

Dr. Karen Semmens

July 30, 2021

PERMISSION

Title:

Department: College of Nursing

Degree: Doctor of Nursing Practice

In presenting this DNP Project paper in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that this university shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my DNP project work or, in their absence, by the Chairperson of the department. It is understood that any copying, or publication, or other use of this project paper, or part thereof, for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my project paper.

Name: Witeh Esoe
(Electronically Signed)

Date: July 30, 2021

Abstract

COVID-19 brought unprecedented challenges in accessing healthcare services. The lack of accessibility to healthcare drastically impacted older adults, especially those in rural America, who experienced multiple issues accessing quality care with an increase in healthcare cost leading to a significant increase in morbidity and mortality rate from COVID-19. Consequently, the usage of telehealth services skyrocketed during the pandemic. As a result, the Geriatric Workforce Enhancement Program (GWEP) emerged with the aim to promote the use of telehealth services to reduce COVID-19 exposure to older adults in rural North Dakota (ND). Thereby keeping older adults safe at home and still having full access to their providers with home-based modified geriatric wellness assessments using the 4Ms (what matters most, mentation, mobility, and medication) via telehealth.

Background and Significance

It is interesting how telehealth gained so much popularity within the past year due to the emerging of the Covid-19 pandemic, though telehealth has been around for over fifty years (Institute of Medicine [IOM] 2012). In the 1920s, clinicians used radios to give medical advice to clinics on ships, and telehealth officially became a form of healthcare delivery in the late 1950s and early 1960s. The National Aeronautics and Space Administration (NASA) and the Nebraska Psychology Institute had specific needs where telehealth was initiated. While NASA was developing the Mercury space program, they also developed a program for physiologic home-based monitoring. The Nebraska Psychiatric Institute and Norfolk State Hospital used closed-circuit television for hospital-based psychiatric consultations (IOM, 2012). Fast-forward to current times; telehealth is mainly used in acute settings, resulting in reduced length of hospital stay, cost, and mortality; however, little emphasis is placed on home-based and rural communities.

One of the most significant telehealth needs is in-home and community-based care, specifically for the elderly population in rural America. According to the US Census Bureau (2019), about sixty million people, or one in five Americans, live in rural areas. Although telehealth is more commonly used in urban settings, rural America is still in great need of telehealth. There is a lack of access to health care in rural settings due to a shortage of health personnel, lack of insurance, increased elderly population, geographical locations, lack of transportation, lack of exposure to telehealth services, and infrastructures. The lack of access to health care in rural areas identifies the need for a telehealth program.

Unquestionably, there is an increase in the geriatric population nationwide with a predicted significant mark in demographics by 2030. At which time, all baby boomers will be older than age sixty-five, thereby expanding the size of the older population to one in every five residents who will be in the retirement age (US Census Bureau, 2020). Referred to as the aging of the baby boomers is projected to outnumber children for the first time in US history, resulting in a high need for the healthcare system to keep up with the ever-changing demands of its population. Thus, to meet the demands of aging America, it is vital to provide quality evidence-based healthcare to the geriatric population. This care can be provided through primary care and the implementation of telehealth. Implementing telehealth in rural communities may also help mitigate health disparities, increase healthcare providers' availability, reduce hospitalization, and bring funding opportunities while curbing the spread of Covid-19 (Monaghesh & Hajizadeh, 2020).

Problem Statement

Covid-19 changed the way healthcare is delivered primarily in rural communities. One of the most significant changes is the increase in telehealth use to reduce exposure to Covid-19 and minimize the rate of patient surge into facilities (Center for Disease Control and Prevention [CDC], 2020). For example, during the first quarter of 2020, the rate of telehealth visits increased by 50% compared with the same period in 2019, with a 154% increase in visits in 2020 (CDC, 2020). The significant shift in healthcare delivery was a call for action in population health nationwide. Though telehealth offers considerable promise, its use and effectiveness are uncertain in rural communities, particularly with the increased rate of Covid-19 related cases and death (Rural Health Information Hub [RHI hub], 2019). As a result of the Covid-19 pandemic drastically affecting healthcare delivery, a project was developed by an interdisciplinary team known as the Geriatric Workforce Enhancement Program (GWEP). The project focused on

creating a geriatric-based telehealth team to deliver an evidence-based assessment using the 4 Ms (what matters most, mentation, mobility, and medication) through telehealth to North Dakota (ND) elders living in their homes and receiving services from a home health agency.

Clinical Question

Will the promotion of telehealth in conducting assessments for the elderly in their home versus going to the provider's office reduces the risk of COVID-19 exposure?

Significance of the Project to Nursing and Healthcare

Even though technology plays a critical role in healthcare, providers and patients still face challenges and have varying views regarding its implementation (Mikhailova, 2018). Some providers are reluctant to implement telehealth to fear losing direct care, losing income, and making incorrect clinical decisions and diagnoses. The role of the nurse in telehealth is essential. Nurses can screen patients during tele-triage to determine if tertiary care is necessary, thereby saving costs by reducing the number of in-person appointments and re-hospitalizations (Snoswell, 2020). The healthcare system extensively uses telehealth in emergency departments to hasten and enhance care delivery, such as during acute stroke. Telehealth positively affects the management of non-critical emergencies in remote and rural sectors; however, the lack of government support, preliminary research, and the need for privacy has been a hindrance to implementation (Du Toit, 2019; Snoswell, 2020).

According to the Centers for Medicare & Medicaid Services [CMS] (2020), telemedicine is considered a cost-effective option to the traditional face-to-face way of providing medical care (CMS, 2020). Even though the cost of implementing telemedicine varies, some of the primary things to consider during implementation include the equipment type, installation fees, technical support staff, telemonitoring landline unit, maintenance, insurance, security, and training or

education costs (CMS, 2020). With the shift for better care through valuable patient data, the system still faces some gaps that need the inclusion of government, healthcare system (public and private), and community stakeholders in developing a robust solution by working collaboratively (Monaghesh & Hajizadeh, 2020). As a result, implementation of the Geriatric Workforce Enhancement Program (GWEP) project to rural ND will enhance collaboration via videoconferencing and telephone consultations; thereby, optimizing patient safety by reducing the exposure to Covid-19 by better preventing, preparing, and treating older adults during the pandemic and beyond while simultaneously saving costs by reducing transportation cost and rate of inpatient visits.

Terminology

1. Elderly: Population aged 55 years old and above
2. Telehealth: Provision of health-related services and information remotely through electronic information and telecommunication devices, whereby the patient and the health care provider do not physically meet in person.
3. Telemonitoring: Implementation of information technology to monitor patients over a distance.
4. Teleconsultation: Provision of therapeutic or diagnostic advice after interactions between a clinician and a patient through electronic means

Theoretical Framework

The theory chosen for this project is the transition theory by Dr. Meleis. The transition theory focuses on humans' experiences, responses, and consequences as they go through a transition or change (Meleis, 2018). The purpose of the transition framework is to help people go through various transitions, such as illness, developmental, cultural, and situational, smoothly while simultaneously mastering the skills and behaviors associated with the new roles and

identities (Bittencourt, 2018; Meleis, 2018). According to Meleis (2018), the transition experience starts before the event, and the endpoint varies based on several factors, such as the duration of the recovery period, mastery of new skills, acceptance of new roles. The transition theory affirms that nurses are concerned with the experiences patients undergo from admission to discharge, and during this period, the nurse develops preventive and therapeutic nursing interventions to manage and support the patients and families during the transitions. Thus, transitions can be assisted or managed by nurses as they care for patients; however, the nurse must first understand the transition experience themselves in order to effectively care for the patients and families (Bittencourt, 2018; Meleis, 2018).

Generally, the most significant transition people experience is developmental, such as aging, and situational, such as retirement, and their understanding of these processes is crucial, which might eventually affect their health and overall wellbeing (Meleis, 2017). Specifically, looking at our geriatric population for this project, most of the elderly simultaneously experience multiple transitions, including aging, retirement, new diagnosis, discharge from hospital, and death of a loved one from; for example, from Covid-19. Though they might know a change is occurring, their level of awareness (perception and knowledge) and engagement in the transition process has a significant role to play and will determine if it will be positive or negative outcomes. Other conditions that affect transition include personal and environmental factors such as cultural beliefs, attitude, literacy level, socioeconomic status, and community resources. If any of the above is unaddressed, it might lead to unhealthy transition and adverse outcomes. Last but not least, it is essential to keep in mind that there is no set time for these transitions as every individual experience is unique and should be addressed accordingly.

According to Romanick-Schmiedl and Raghu (2020), although telehealth offers solutions to access health care from any location during the current pandemic, it is not yet uniformly integrated into healthcare systems, and disruptive processes necessitate major adaptations to existing frameworks. In addition, the adoption of telehealth should not come at the cost of comfort and safety of patients or quality of care provided by health personnel; therefore, there is a need to efficiently transition from face-face encounters to telehealth (American Medical Association [AMA], 2020). With these in mind, the GWEP project created an interdisciplinary geriatric-based telehealth team via the GWEP academic partners. With plan to train telehealth ambassadors known as the Quality Service Providers (QSPs) and home health caregivers on home-based geriatric telehealth on how to utilize technology to perform these assessments effectively, teach the older adults and their caregivers on how to engage and optimize telehealth services, educate community stakeholders on how to use telehealth, and telementor primary care providers and direct care health workers about COVID-19 (GWEP Grant, 2020).

- **Concepts and sub-concepts include:**

- Transition: Anticipating, experiencing, completing
- Types of transition:
 - ❖ Developmental: aging, birth, adolescence, and motherhood
 - ❖ Situational: role changes such as divorce and death
 - ❖ Health/illness: admission, diagnosis, and discharge,
 - ❖ Organizational: social, political, and economic environmental changes
- Patters of transition: Single, multiple, sequential, simultaneous, related, and unrelated.

- Properties of transition experiences: Awareness, engagement, change and difference, transitional time span, and critical point and events
- Transition conditions
 - ❖ Personal characteristics: Perceptions and meanings of health, cultural beliefs, socioeconomic status, preparation, and knowledge
 - ❖ Environmental: Community resources, society, and global
- Patterns of response
 - ❖ Process indicators: Engaging, locating and being situated, seeking and receiving support, and developing confidence
 - ❖ Outcome indicators: Mastery, fluid integrative identities, resourcefulness, and healthy interaction
- Nursing therapeutics: Assessment of readiness, risk assessment, transition preparation, role supplementation, creation of a healthy environment, and monitoring
- **Assumptions:** Transitions both result in change and are the result of a change
 - Nursing: Nurses are the primary caregivers of clients and their families who are undergoing transitions.
 - Person: Individuals experiencing changes in fundamental life patterns, such as changes in roles, identities, and relationships.
 - Health: The mastery of symptoms, wellbeing, and ability to assume new roles.
 - Environment: Conditions that expose individuals to potential damage, problematic recovery, or delayed or unhealthy coping.

Literature Review

Search Engines and Databases

This study involved researching peer-reviewed sources from different databases that are endorsed as reliable for healthcare information. Data collected to support this paper were obtained from peer-reviewed sources from multiple databases, including British Medical Journal, CINAHL complete, Embase, and PubMed databases, which were accessed through the University of North Dakota's Harley E. French Library for Health Sciences.

Appropriate Controlled Vocabulary/Search Terms

Keyword searches were done using Boolean/Phrase connectors "AND" and "OR" to specify or broaden the searches. The wildcard character "*" was used to prune words to include all forms of the root word. The keywords were "Telehealth in elderly," "Telemedicine," "E-health," "Telemonitoring," and "Teleconsultation," "Transition theory," "Covid-19 pandemic," "Role of transition," "Geriatric assessment," and "Mobility assessment tools."

Inclusion and Exclusion Criterion

The literature search focused on finding studies that address telehealth and limited English articles only with publication dates ranging from 2016 to 2021, also included high-level theoretical and or methodological research articles.

The Total Number of Pieces of Evidence Reviewed

In total, close to 1323 results were obtained from the databases, and a more thorough approach was used to narrow down the most relevant peer-reviewed journals and articles. This study identified and utilized at least 15 peers reviewed sources. Overall, all databases used generated several resourceful articles that supported the research of telehealth in elderly care.

Doraiswamy et al. (2021) did a scoping review on telehealth use in geriatrics care during the Covid-19 pandemic following the strengths, weaknesses, opportunities, and threats (SWOT) analysis. The authors support that globally, Covid-19 has affected the elderly population disproportionately, with a mortality risk 100 times greater than those in the younger age groups due to increased vulnerability to multifactorial causes such as lack of accessibility, geographical locations, lack of standardization, and other social determinants. Doraiswamy et al. (2021) emphasized that among these factors, lack of accessibility to healthcare services for the elderly is detrimental to the population's health. According to the authors, before Covid-19, the healthcare system used telehealth services. However, telehealth services acceptance was limited due to skepticism from patients and providers related to data privacy, patient safety, lack of access to technology, and ambiguous health insurance policies. Also, the low level of technology literacy and decline in cognition in older patients were concerns in the use of telehealth.

Nevertheless, regardless of the strengths, weaknesses, and threats associated with telehealth, several telehealth models have emerged, eventually improving availability, accessibility, affordability, and quality of care provided to older people during the pandemic and beyond. To improve telehealth utilization in the geriatric population, Doraiswamy et al. (2021) recommended that older people and caregivers participate in communication technology training, discuss concerns with healthcare providers and explore solutions to mitigate concerns. Also, they encouraged technology companies to create devices to accommodate age-related sensory and cognitive impairments, replace technical jargon with easily understandable terms and have a timely backup process in the case of equipment or connectivity issues. It was recommended that healthcare systems provide telehealth educational outreach programs, provide reimbursement for telehealth services, and provide equipment such as tablets and laptops to older people

(Doraiswamy et al., 2021). The authors mentioned that the limitation included not doing a quality assessment of the review since it is a scoping review and all articles used were peer-reviewed. The constraint of logistics imposed by the pandemic opted for the second-best option of one reviewer screening and extracting the data and the other checking to address discrepancies (Doraiswamy et al., 2021).

Soubra et al. (2019) did a systematic review of 31 elderly mobility tests to evaluate how gait, balance, and transfer in community-dwelling elderly play a valuable role in maintaining healthy aging and preventing a decline in mobility. Their goal was to provide clinicians and researchers with valuable information about mobility measurement tools to enable them to select the appropriate one wisely. Soubra et al. (2019) affirmed that though mobility plays a crucial part in maintaining healthy aging, the inability to walk has adverse effects on older adults' physical, psychological, and social qualities in older adults, leading to dependency, increased fall risk, increased hospital admission, and institutionalization. According to Soubra et al. (2019), several assessment tools are used to evaluate elderly mobility; however, these tools vary from each other concerning the elderly functional capacity. The result interpretations vary between quantitative and qualitative outcomes, while a few interpretations had both qualitative and quantitative outcomes, with both interpretations having strengths and weaknesses and none being superior or inferior to the other. Overall, the findings revealed that no perfect universal test as a single tool could not be suitable for every individual (Soubra et al., 2019).

On the same note, Panciano et al. (2020) carried out a systematic review study to evaluate how inertial sensors embedded in a mobile device can be used to measure the Timed Up and Go (TUG) test for older adults. They affirmed that most older people only use mobile devices for emergencies such as phone calls, and only very few use them for messages and video calls. The

authors suggest that the application of technology advancement in physiotherapy will support numerous clinical evaluation procedures such as disease and fall detection. The authors emphasized that collaboration between information technology and clinicians is needed for efficient application. In this study, the most commonly used sensors include the accelerometer, gyroscope, and magnetometer to calculate sit-to-stand and stand-to-site duration, angles of movements, speed, balance, and acceleration throughout the test. Panciano et al. (2020) recommended that performing the TUG test on mobile devices instead of doing it manually on a stopwatch will help automate data collection and measurement and could identify patterns that could lead to early detection of health issues and concerns before they become severe and difficult to manage such as the diagnosing and treatment of Parkinson's disease. The findings showed that the TUG test could be done reliably by patients and caregivers without visiting a physiotherapist, and the physiotherapist can monitor the progression of the disease by integrating the log of the patient's TUG test results (Panciano et al., 2020).

A retrospective cohort study by Tilson et al. (2018) focused on investigating whether the discharge destination for older adults can be determined using functional mobility as measured by the Modified Elderly Mobility Scale (MEMS). The statistic shows that a combination of functional, cognitive, and social factors plays a role in predicting discharge destination; however, adequate discharge planning has proven to reduce hospital readmission, duration of hospital stay, mortality, and improve the overall quality of life. Tilson et al. (2018) found that though the functional Independence Measure (FIM) helps predict future level care post-discharge, it is time-consuming to complete, so they proposed the Elderly Mobility Scale (EMS), which is a simple screening tool and still improves the level of care post-discharge. The authors used the MEMS for this study as it has shown to be more valid than FIM and high reliability regardless of the

medical condition. In this study, the MEMS scores determine the discharge destination. For example, a fall patient with a discharge score of 6 or below is most likely to be discharged to a rehabilitation facility, and those with scores of 6 or above are discharged home with care. The study data's limitations were collected just from one hospital, which may not reflect the general population. Though the risk of bias was reduced with a cohort design, there were insufficient data from 24% of patients. Also, a 28% prediction error rate was due to the rest of the homes' underprediction as destinations. Nevertheless, the study showed that MEMS was the first single functional measure to predict patient discharge destination with 71% accuracy correctly, and their results help increase the quality of life in older adults (Tilson et al., 2018).

Project Purpose

Ultimately, the Covid-19 pandemic had a toll on not just the healthcare system but everyone globally. The elderly population, most especially those in the rural areas, were severely affected due to the restrictions imposed by the government, such as quarantine and new working arrangements for all. In order to protect the elderly in rural ND from exposure to Covid-19 and mitigating the gap in rural and tribal access to geriatric services, the Dakota GWEP grant created a telehealth project to meet the health needs of the population. They were also considering the gap in the older adults' capability and willingness to utilize telehealth. Thus, the project's purpose focuses on evaluating the effectiveness of applying telehealth in conducting assessments for elderly patients who are too vulnerable to go to the provider's office and ultimately receive the medical treatment in their homes versus having to go into the office (GWEP Grant, 2020).

Goals

By the end of May 2021, we were able to promote the use of telehealth technologies to reduce the risk of COVID-19 through increased telehealth technology use.

Actual GWEP grant goals include:

- Prevent – promote the use of telehealth technologies to reduce the risk of COVID-19.
- Prepare – enhance readiness to respond to COVID-19 through telehealth technologies.
- Respond – provide access to telehealth technologies to limit the spread of COVID-19.

Objectives

1. Completed by September 2020
 - Create a geriatrics-based telehealth team via Geriatrics Workforce Enhancement Program (GWEP) academic partners.
2. Completed by December 2020
 - Train telehealth ambassadors on performing home-based telehealth services.
 - Create a modified assessment tool template based on the 4Ms.
3. Completed by July 2021
 - Educate community stakeholders on how to use telehealth.
 - Deliver the annual wellness exam by telehealth teams with pandemic-enhanced education.
 - Educate older adults on the use of telehealth.
 - Reveal telehealth assessment findings to the GWEP team and primary care providers

Design and Methods

Population

The study's population are elderly patients ages 55 years and older with underlying conditions living in their homes and are clients of a Quality Service Provider (QSP) agency and home care agency in rural and urban North Dakota.

Sampling type

The sampling type is nonprobability sampling-purposive sampling. The inclusion criterion included participants 55 years and older, cognitively competent to give verbal consents and clients of the QSP agency and/or the home health agency. Non-clients of the listed agencies, clients under 55 years of age, and clients who cannot verbally give consent due to a dementing illness were excluded from the study. The potential participants were recruited based on information contained in protected records, such as medical records, educational or employment records. The QSP and home health care agency managers identified potential participants who currently receive services from the agency. The goal was to recruit ten individuals from either the QSP or home care agency.

Study Design

The study design is a mixed-method study of qualitative and quantitative based on the data collection.

Setting

The setting for this project was in the elderly participants' homes in Grand Forks and Fargo, ND.

Procedure for Implementation

The GWEP team created this project to determine the effectiveness of using telehealth in conducting assessments in the home for the elderly who are too vulnerable to physically go to the provider's office. The GWEP team involved with implementation consists of a physical therapist, occupational therapist, pharmacist, physician, four DNP students, nurse educator students, and the agencies. The nurse educator student trained the QSP agency and caregivers from the home health agency to use an electronic device such as an iPad. After IRB approval, the team began

the visits. The participants gave verbal informed consent before the visit. The initial wellness visit was approximately 45 – 60 minutes long, with a follow-up visit lasting approximately 30 minutes. The assessment was conducted in the home setting. The home health aide or QSP assisted the elders in navigating an electronic device during a modified geriatric wellness assessment. The electronic device was provided by the researcher and used only during visits to participants' homes. The DNP student was on the video screen; they were not present in the participants' home, and the QSP or home health aide connected over a video session with the DNP student. The DNP students were on the opposite end of the electronic device when they performed the assessment. Throughout the implementation process, the team adhered to the Health Insurance Portability and Accountability Act (HIPAA) guidelines of the University of North Dakota (UND). The encounter was recorded, and the recordings will be used for educational purposes only and will follow the HIPAA guidelines of the UND.

Description of Survey/Tools

The research was conducted on two separate visits. A five-question pre-survey to assess the participants' perception of telehealth and technology usage. A four-question post-survey to evaluate their experience of the telehealth project. On the initial visit, the participants were asked to answer modified geriatric wellness assessment questions, including demographic, past medical history, what matters the most, psychosocial, mentation, mobility, and medications. During the assessments, what matters most was assessed using the Activities of Daily Living (ADL) tool. Mentation was assessed using the PHQ-2 and PHQ 9, depending on the initial score. The PHQ assesses depression. The Mini-Cog was used to assess cognitive impairment. Mobility was assessed using the TUG (Timed Get Up and Go); it measures the elder's functional mobility. The Elderly Mobility Scale (EMS) is an alternative assessment tool option for the elderly with

difficulty with mobility. The 2019 BEERS criteria was utilized for medications after a medication review if the elder has identified specific side effects and contraindications of medications. After completing the initial visit, the interdisciplinary team will evaluate the video to determine individual recommendations to be discussed with the participants on the follow-up visit. The follow-up visit will be approximately 30 – 45 minutes, depending on the recommendations.

Protection of Human Subjects and Confidentiality

Permission was obtained from the Native American Tribal Council to conduct the study. The tribal council did not have its own review board, so they approved the utilization of the Institutional Review Board (IRB) from UND. All the staff in the study completed the UND IRB research training, and UND IRB approval was obtained before implementing the study. Also, all the research involved in the research complied with the HIPAA regulations. Informed consent was verbalized by participants before the initial assessment began. In order to maintain confidentiality, an alphabet system was used to identify the participants. For example, the first participant was identified as Mr./Mrs./Miss A; and so on. The participant was given a number to coincide with their assigned letter of the alphabet. For example, Mr. A would be assigned the number 1. Also, no identifiable information was obtained from the participants' caregivers receiving the education of the electronic device. All identifying information will be stored in a locked file under lock and key in the principal investigator's office at the UND. Upon completing the project, the alphabet system used to identify the participant, their telephone numbers, and names will be destroyed, while the video will be destroyed after the required six-year time frame.

Outcomes

The project's expected outcomes are to increased knowledge and use of telehealth by under-resourced populations in rural and Indian country, improved telehealth skills among healthcare trainees, and provide better health metrics for older adults receiving geriatrics telehealth. Data collection and measurement methods were observation, self-report, and pre-and-post survey questions, which yield reliable and valid data. After data collection, the findings show that most elderly have little or no knowledge of using technology and do not have access to the technology platforms such as smartphones and iPad used to access telehealth. Although there was limited data interpreted from the five participants, 40% of the participants were comfortable using technology, and 40% had used telehealth services previously to this project. Also, four out of five or 80% of the participants verbalized the value of telehealth by stating that they felt they had received the same or higher level of care via telehealth at home and would use telehealth services again.

Data Analysis and Interpretation

The purpose of the project is to promote telehealth technologies in conducting assessments for the elderly in their home versus going to the provider's office, reducing the risk of COVID-19 exposure (GWEP Grant, 2020).

Results

The data was collected using pre-and-post survey questionnaires. Once the data was collected, comparative data analysis was done between the pre-and-post-survey responses. Data was collected from five participants. The pre-survey was to assess the participants' perception of telehealth and technology usage, and the results revealed that two out of five or 40% stated they had previously used telehealth services and are comfortable using technology. In contrast, three

out of five or 60% had never used telehealth services. After the assessment, a post-survey was done to evaluate their experience of the telehealth project. The result from the post-survey shows that four out of five or 80% of the participants stated that they received the same or higher level of care via telehealth at home and would use telehealth services again. Also, 80% reported that they would use telehealth services again. The Statistical Package for Social Science (SPSS) software was used to analyze the data collected.

Validity

Though it was a small sample of five participants yielding limited data, no problems were encountered that might have influenced or biased the results. All participants were randomly recruited and were asked that they share with the team and much or as little information they feel comfortable providing. Also, no incentives were used to enhance the validity of the findings. Hence, no threat to validity was noted, and the findings were valid and unbiased.

Implications and Future Directions

The pre-survey results show that only two out of five or 40% of the participants had previously used telehealth services, while the majority, 60%, had never used telehealth services before. This finding supports previous research because, before the pandemic, studies show that there was minimal usage of telehealth services in the United States. While during and post COVID, there has been a remarkable ongoing expansion of telehealth usage nationwide and globally. Conversely, four out of five or 80% of the participants stated that they felt they received the same or higher level of care via telehealth at home and would use telehealth services again during the post-survey. This result corresponds to previous studies showing that telehealth does not only improve access to healthcare to the underserved population but also increases

availability with a better provider-patient relationship at a reduced cost from the patient's convenience (CDC, 2020).

The transition theory by Dr. Meleis explains the various stages, experience, and response people go through during a change. The result of this study supports the transition theory model whereby even though from the pre-survey only 40% of the participants have previously used telehealth services and 60% had never used it, from the post-survey, 80% of the participants, including some of those who had never used telehealth affirmed that they received the same or higher level-of-care via telehealth compared to going to the provider's office. This implies that although telehealth is new to most, they were able to transition smoothly to this new system of telehealth while experiencing multiple patterns of transition simultaneously. For example, a participant who is elderly is already going through developmental transition (aging and retirement), can also experience situational transition (death of loved one), health/illness transition (newly diagnosed), and organizational (now doing video consultation with a provider at home and no longer going to the provider's office due to the pandemic).

Several limitations were noted, including limited access to high-speed internet and electronic devices such as smartphones and iPad, which are all factors that affect the ability to carry out telehealth services effectively. Also, the technology illiteracy as most elderly in the rural area has little or no knowledge on how to maneuver technology especially not owning an electronic device. Another limitation is the small sample size of five participants, which can affect the validity of the results. During recruitment, some participants were reluctant and skeptical to participate in the project when they heard the word "telehealth, " so the recruiter had to word it differently, such as an assessment using a computer at your home, which somewhat eased the skepticism unwillingness.

The significance of the project findings is the promotion of telehealth services to reduce the risk of COVID-19 exposure and delivery of modified geriatric wellness assessment diseases using pandemic enhanced education as evidence by 80% of the participants verbalized the value of telehealth by stating that they received the same or higher level of care via telehealth at home. Therefore, fostering health promotion by providing healthcare services to the underserved population of rural ND in a cost-effective manner.

Some suggestions for practice, educations, and policy include providing adequate training, funding opportunities, suitable reimbursement policies, equipment, and internet to support and promote telehealth services

Conclusion

Overall, the project aims to promote the use of telehealth technologies to reduce the risk of COVID-19 exposure and keep elderly clients safe at home and have full access to the provider. The study's findings show that the project's aim was achieved as evidenced by 4 out of 5 or 80% of the participants verbalized the value of telehealth by stating that they received the same or higher level of care via telehealth at home. Therefore, telehealth is as beneficial as going to the provider's office and, more so, helps to reduce exposure to COVID 19 and other communicable diseases. Also, using the 4Ms approach was successful in providing a home-based modified geriatric wellness assessment at the convenience of the participant's home. Two of the most significant limitations were the small sample size and technology illiteracy which can be rectified by recruiting more participants with diverse backgrounds and providing adequate and ongoing telehealth technology education. Some suggestions for future projects will include research of telehealth experience in different age groups, a nursing perspective of telehealth with outpatient clients, and the use of telehealth in palliative care.

References

Bittencourt, M. N., Dias Marques, M. I., & Mendes Diniz de Andrade Barroso, T. M. (2018).

Contributions of nursing theories in the practice of the mental health promotion. *Revista de Enfermagem Referência*, 4(18), 125–132. <https://doi.org/10.12707/RIV18015>

Centers for Medicare & Medicaid Services. (2020, March 17). Medicare telemedicine health care provider factsheet. [https://cms.gov/newsroom/fact-sheets/medicare-telemedicine-](https://cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet)

[health-care-provider-fact-sheet](https://cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet)

Doraiswamy, S., Jithesh, A., Mamtani, R., Abraham, A., & Cheema, S. (2021). Telehealth use in geriatrics care during the COVID-19 pandemic-A scoping review and evidence synthesis. *International Journal of Environmental Research and Public Health*, 18(4).

<https://doi.org/10.3390/ijerph18041755>

Geriatrics Workforce Enhancement Program Grant. (2020). Geriatrics workforce enhancement program. *Health Resources & Services Administration*.

<https://www.hrsa.gov/grants/find-funding/hrsa-19-008>

Institute of Medicine. (2012). *The role of telehealth in an evolving health care environment: workshop summary*. Washington, DC: The National Academies Press.

<https://doi.org/10.17226/13466>.

Monaghesh, E., & Hajizadeh, A. (2020). The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. *BMC Public Health*, 20(1), 1193.

<https://doi.org/10.1186/s12889-020-09301-4>

Snoswell, C. L., Taylor, M. L., Comans, T. A., Smith, A. C., Gray, L. C., & Caffery, L. J. (2020). Determining if telehealth can reduce health system costs: Scoping review.

Journal of Medical Internet Research, 22(10), e17298. <https://doi.org/10.2196/17298>

Soubra, R., Chkeir, A., & Novella, J.-L. (2019). A systematic review of thirty-one assessment tests to evaluate mobility in older adults. *BioMed Research International*, 2019, 1354362.

<https://doi.org/10.1155/2019/1354362>

Tilson, T., Rohan, M., & Larmer, P. J. (2018). Use of a functional mobility measure to predict discharge destinations for patients admitted to an older adult rehabilitation ward: A feasibility study. *Australasian Journal on Ageing*, 37(1), E12–E16. [https://doi-](https://doi.org.ezproxy.library.und.edu/10.1111/ajag.12491)

[org.ezproxy.library.und.edu/10.1111/ajag.12491](https://doi.org.ezproxy.library.und.edu/10.1111/ajag.12491)

United States Census Bureau. (2018). Older people projected to outnumber children for the first time in US history. [https://www.census.gov/newsroom/press-releases/2018/cb18-41-](https://www.census.gov/newsroom/press-releases/2018/cb18-41-population-projections.html)

[population-projections.html](https://www.census.gov/newsroom/press-releases/2018/cb18-41-population-projections.html)