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Perceived effectiveness of telehealth services among adult patients with healthcare needs in a highly urbanized city

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Abstract. Telehealth services are essential optional tools for therapy and potential strategies in providing healthcare regardless of the patient-doctor face to face meeting. Hence, this study determined the perceived effectiveness of the telehealth services in terms of patient receiving care, collaborative intervention, nurturing patients, and cost as assessed by adult outpatients with healthcare needs in private clinics in Bacolod City, Philippines relative to sex, age, and case. Also, it identified their challenges in availing the telehealth services. Likewise, it investigated the difference in the telehealth services' perceived effectiveness when grouped to the demographics. Using the descriptive-comparative design, a validated and reliability tested questionnaire was responded by 158 adult patients. In analysis, it utilized mean, standard deviation, percentage distribution, rank, and Mann Whitney U test. Meanwhile, the researcher adhered to the Philippine Health Research Ethics Board. Generally, the perceived effectiveness of telehealth services was rated very high. All areas were also scored very high along with all the demographics. Meanwhile, they were mostly challenged virtually in terms of poor internet connectivity, lessening of proper evaluation, and hindering of quality patient assessment. Inferentially, there was no difference in the perceived effectiveness when grouped to all demographics. Hence, the findings imply the continuous utilization of the telehealth services in effectively providing the patients with quality healthcare.

Keywords. Perceived effectiveness, telehealth services, adult patients with healthcare needs, descriptive-comparative, Philippines

1.0 Introduction

Telehealth is an essential, optional tool in providing therapeutic services [1] and a strategy to provide healthcare even though patients and doctors do not meet face to face [2]. In response to the latest health development, the World Health Organization (WHO) had called for a response strategy that included early diagnosis, patient isolation, symptomatic monitoring of contacts, suspected and confirmed cases, and public health quarantine. Telehealth demonstrated improvements in the efficacy of therapeutic interventions and the quality of care while providing patients with psychological support, helping them save time, enhancing treatment compliance, and saving money [3]. Globally, Telehealth has been used to provide health care to treat a variety of conditions for the past three decades, including audiovisual interaction, medical data transmission, audio-only format, still images, and full-motion video via a patient portal [4]. Growing global healthcare digitalization activities and increasing

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government initiatives in remote patient monitoring are expected to increase the growth and use of Telehealth [5].

In Asia, there needs to be a healthcare workforce; there are only 1.93 doctors per 10000 population in Cambodia and 22.94 doctors per 10000 population in Singapore, resulting in telehealth use [6]. ASEAN countries have varying telehealth guidelines that focus on ethical and clinical aspects but fail to discuss the technology needed to deliver these services [7]. Telehealth has become a prominent mode of primary care delivery. However, the transition to Telehealth unfolded differently across communities. Still, the ASEAN countries need more long-term public interest in Telehealth, though there was a regional association with mobile telehealth applications [8]. The nursing labor force continues to expand with the expanded use of telehealth services and other technology in healthcare to have a broad scope of obligations for the nursing profession to grow to its fullest degree [9]. The pandemic has also accelerated the role of digital health interventions, including Telehealth, in supporting health services delivery [10].

In the Philippines, the rate of patient health recovery is improving, but there is a slow progress of improvement in health outcomes when compared to other countries [11]. This led to the establishment of Telehealth as an alternative to traditional face-to-face healthcare services and improved the quality of life of many Filipinos [12]. In one of the hospitals in Davao City, Telehealth raised the self-efficacy and confidence of patients, knowing that they can access health care online [13]. The House of Representatives House Bill No. 7422, which seeks to establish and develop Philippine telehealth industries using information and communications technologies (ICT) to deliver healthcare services, is still pending with the Committee on Health [12].

Telehealth practice still needs to be fully utilized. The recent Pandemic has initiated the accelerated adaptation of the local healthcare system from face-to-face to digital healthcare. Local studies conducted in the teleradiology care system revealed that the awareness level was low in terms of its use, results comparable to the standard audiometry, and usage by medical practitioners. The acceptance level was high. Lastly, it was viable in its marketing and financial characteristics [14]. The use of Telehealth in rural areas and among patients with a lower income needs to be improved. The lack of resources and supplies, the accessibility of medical facilities, and internet access result in variations in the Telehealth utilization [15].

Telehealth has many potential advantages, including maintaining critical access to care while keeping patients and providers safe from unnecessary exposure, implementation challenges, and barriers to patient adoption in resource-limited settings [16]. For patients with limited access to essential devices, same-day teleconsultations at local clinics may guarantee that all patients receive the medical care they need and deserve [12]. Because of this, future researchers should conduct similar studies to have a deeper understanding of engaging in telehealth communications, sharing their knowledge, and easily influencing other healthcare providers [9]. Locally, a study has been conducted on the Awareness, Acceptance, and Liability of Mobile Teleaudiology among patients with hearing concerns in Negros Occidental. However, no study has been conducted to evaluate the perceived effectiveness of Telehealth from medical and surgical patients' points of view [14].

This study bridges the gap between claims that Telehealth is not as effective as having a face-to-face approach to clinical examination; thus, this strives to present proof that Telehealth is an effective way of rendering healthcare services [17]. In the United States, studies reported positive health outcomes and experiences of telehealth use where rural population acceptance increased, noting that technology was convenient and efficient, saved travel cost and time,

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improved access to care, and increased education and training for both patients and health care providers [18]. Also, in a study conducted in Western Australia, patients with eating and mood disorders achieved huge health improvements, giving high regard to the quality of the treatment efficacy comparable to the usual face-to-face benchmark [19]. Likewise, in Zamboanga City, Philippines, medical practitioners conducted a study from respondents mostly aged 60–69 (57%) and female (93%), with 79% previously diagnosed with hypertensive cardiovascular disease (HCVD) and type-2 Diabetes mellitus (T2DM) where results showed positive home management in medication compliance, and an improved health outcome comparable with in-person clinic visits [20].

Thus, this study determined the level of perceived effectiveness of telehealth service in terms of patient receiving care, collaborative intervention, nurturing patients, and cost as assessed by adult outpatients with healthcare needs in selected adult private clinics in Bacolod City, Negros Occidental when they are taken as a whole and grouped according to sex, age, and case. Likewise, it identified the challenges encountered by outpatients in the availing the telehealth services. Also, it investigated the significant difference in the perceived effectiveness of telehealth services when they were grouped according to the demographics.

2.0 Framework of the Study

This study theorized that the perceived effectiveness of telehealth services may differ in terms of age, sex, and cases of the patients. This study applies the Care, Cure, and Core of Telehealth. Before the pandemic, patients obtain their healthcare needs through face-to-face consultations. With the onset of the COVID-19 pandemic, the care, cure, and core aspects of the patient's health are carried out in the best possible way. Through online platforms, care, cure, and core are rendered via Telehealth to minimize the spread of the virus. Until now, when the Philippines is still experiencing Level 1 COVID-19 alert, Telehealth has become a convenient way to reach patients and obtain the healthcare they need. Along with receiving the healthcare they need, every aspect entails a cost for every consultation, procedure, or therapy.

This study was anchored on the 3C's theory of Hall (1960) as cited in Gonzalo [21]: the Care, Cure, and Core. Care is the function of the nurse as a career. Care means nurturing the patient, which is a noble task of the nurse. Cure refers to administering medications, treatments, and other forms of therapy. The cure aspect refers to the function of the physicians, other therapists, and nurses—also, the nurse advocates for the patient’s rights in the cure aspect. The core is the patient himself receiving care. It is essential to note the patient's response to care as they are the care receivers. Their evaluation of the care they received could be efficient or not.

The factors that influence the recovery of patients are the patient as receiver of care, the collaborative intervention between the healthcare team, the manner of handling patients, and the cost of healthcare. Nurses are expected to render personalized care according to patients’ needs. The nurse manages the patient’s health needs by promotion, prevention of illness, cure, and rehabilitation. The care given to patients is not only rendered by the nurse but collaborated with other members of the healthcare team.

3.0 Methods

The study utilized the quantitative research design particularly the descriptive-comparative approach. On one hand, the descriptive approach assessed the level of perceived effectiveness of telehealth services in terms of patient receiving care, collaborative intervention, nurturing patients, and cost. On the other hand, the comparative approach investigated the

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difference in the level of perceived effectiveness of telehealth service as assessed by adult outpatients with healthcare needs when they are taken as a whole and grouped according to sex, age, and case. The respondents of the study were the 158 adult outpatients with healthcare needs in selected adult private clinics in Bacolod City, Negros Occidental, Philippines who availed the telehealth services from November 2022 to April 2023. These clinics were selected because they cater patients using telehealth services with adult medical and surgical cases.

Table 1. *Demographic Profile of the Respondents*

Variable	f	%
Sex		
Male	56	35.4
Female	102	64.6
Age		
38 years old and below	78	49.4
39 years and above	80	50.6
Case		
Medical	144	91.1
Surgical	14	8.9
Total	***158***	***100.0***

Note: average=38.6 years old

In assessing the level of perceived effectiveness of telehealth services, this paper employed a validated and reliability tested researcher-made questionnaire in the areas of patient care, collaboration, nurturing aspects, and cost. This was based from House Bill 6336 or the Telehealth Act of 2012 promulgating a comprehensive policy for National System for Telehealth Service in the Philippines. Meanwhile, checklist was used to identify the challenges encountered by the adult outpatients with healthcare needs in availing the telehealth services. The instrument was subjected to the validation of the Subject Matter Experts (SMEs) and yielded a Content Validity Ratio (CVR) of 0.95. In terms of the reliability, the questionnaire was pilot tested to 30 non-actual respondents and yielded a Cronbach's alpha score of 0.93. It was responded using the scale in ascending order: very low, low, high, and very high.

In analyzing the data, the study utilized the descriptive and comparative analyses. The descriptive analysis was used to determine the level of perceived effectiveness of telehealth services using mean and standard deviation. Meanwhile, frequency count, percentage distribution, and rank were employed to identify the challenges. Kolmogorov-Smirnov test was used to determine the normality of the variables. The normality test revealed that the variable effectiveness [KS=0.121, p=0.000] was not normally distributed. Since the variable was not normally distributed, non-parametric tools were used to answer the inferential questions. Mann Whitney U test was utilized to determine the significant difference in the level of perceived effectiveness of telehealth service when adult outpatients were grouped according to sex, age, and case. Lastly, the researcher addressed the general principles of respect for persons, justice, and beneficence to fully guarantee the ethical soundness of the study in line with the guidelines established by the Philippine Health Research Ethics Board (PHREB). Specifically, it addressed issues regarding the privacy of the participants and the confidentiality of the data gathered.

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4.0 Results and Discussion

Level of Perceived Effectiveness of Telehealth Services

Table 2 presents the level of perceived effectiveness of telehealth service by adult patients with healthcare needs. The level of perceived effectiveness of telehealth service as a whole (M=3.29, SD=0.32) is very high. When grouped according to sex, male (M=3.27, SD=0.33) and female (M=3.3, SD=0.32) patients rated very high effectiveness. In terms of age, patients 38 years old and below (M=3.3, SD=0.32) and 39 years and above (M=3.28, SD=0.33) rated very high effectiveness. According to the case, medical (M=3.29, SD=0.32) and surgical (M=3.35, SD=0.35) patients rated it as very high effectiveness. In the area of patient receiving care, the level of perceived effectiveness of telehealth service as a whole (M=3.23, SD=0.41) is high. When grouped according to sex, both male (M=3.17, SD=0.41) and female (M=3.26, SD=0.42) patients rated high. In terms of age, 38 years old and below (M=3.25, SD=0.43) and 39 years old and above (M=3.21, SD=0.4), patients rated high. According to the case, medical (M=3.21, SD=0.41) patients rated high, while surgical (M=3.37, SD=0.41) patients rated very high.

Overall, in the area of patient receiving care, patients, as recipients of care, feel that they are whole persons even though the health care service is availed only via Telehealth and not face to face with the nurse, physician, or other health care personnel. In the study, the patients, as respondents and recipients of care, often feel worthy as people who need care. Notwithstanding the hindrance of restrictions when the fight against COVID-19 was not yet totally lifted, Telehealth often allowed the patient to feel that there is still a community [21] that truly cares and allows them to thrive.

Patients bring along with them the feeling of "suffering" [22]. Telehealth, even though delivered online, has often made clients feel independent, dignified, and able to set daily goals [23]. Patients perceive Telehealth as highly effective as it allows communication, a chance for rapport, expression of feelings, getting instructions, and explaining symptoms by exchanging ideas between the nurse and patient, as it encourages patient independence. Telehealth consultations were perceived by the patients to often cover the most critical aspects of patient receiving care, such as the physical, emotional, social, spiritual, and intellectual dimensions of health, making the patients satisfied as Green et al. [24] claimed, that covering the aspects of patient care results in life satisfaction. Having scored high as a whole, the perceived level of effectiveness of telehealth services often meets the required standard of health service. These patients, as clients Berman et al. [22] believed that Telehealth could provide services and a diagnosis to resolve the condition, efficiently mobilize healthcare resources, increase accessibility for patients, increase service utilization, and increase satisfaction [25], especially during times when accessibility to health care services is hard, due to community restrictions in COVID-19.

In the results, males perceive Telehealth to always meet the required standard of health service, which is the same as females. For clients who suffer from illness, Telehealth has somehow provided relief from that suffering, as shown by the high perception of the effectiveness of Telehealth in patients aged 38 and below and patients aged 39 and up. Except for surgical cases, where they perceived the effectiveness to be very high, and could be attributed to the claim that surgeries are medical emergencies needing operations [26,27], so patient feels very high effectiveness of Telehealth because they receive urgent answers for their medical problems. Telehealth needs the call of care in Hall's (1960) as cited in Gonzalo [21] theory. The patient, as the core of care, manifested independence in their care, as evidenced by

their high rate of effectiveness of Telehealth. The patient, with the help of the nurse and other healthcare team members, could set goals for himself rather than depend on others to take the actions necessary to maintain his health.

In the area of collaborative intervention, the level of perceived effectiveness of telehealth service as a whole (M=3.40, SD=0.41) patients rated very high. When grouped according to sex, male (M=3.38, SD=0.39) and female (M=3.41, SD=0.43) patients rated very high. In terms of age, 38 years old and below (M=3.38, SD=0.42) and 39 years old and above (M=3.41, SD=0.41), patients rated very high. Regarding cases, medical (M=3.39, SD=0.42) and surgical (M=3.43, SD=0.41) patients rated very high.

Collaboration is a very important ingredient in the care of patients. Grasping instructions from the nurse, as collaborated with the attending physician, is perceived by the patients as very high in effectiveness when delivered via Telehealth. The results showed that the care and cure of patients are not compromised, and it is aligned with Aghamohammadi et al. [28] that patient recovery is at stake when there is poor collaboration between nurses and doctors. Regardless of sex, age, and case, patients rated collaboration as very high. The patients find the explanation highly effective and can access medicine outlets even when it is electronically prescribed. The results conform with the findings of Taylor et al. [29] that the role of pharmacy is indispensable in healthcare. The physicians and nurses have provided well-delivered instruction on medications. In Laboratory collaboration, online electronic prescriptions allow patients to access flexible and viable information that supports clients [30]. The results supported the commendation of Yamamoto [31] that relationships and collaboration among healthcare personnel must be present to improve the patient's condition.

The functions of other healthcare team members, such as the roles of pharmacy and laboratory, were very highly observed in Telehealth. Patients expressed that they could quickly grasp the instructions and that the medications were explained well. They can easily access medicines that are electronically prescribed. The laboratories accepted their laboratory requests, and that can feel the highly effective collaboration between the healthcare team members. Overall, the care provided by Telehealth aligns with the claims of Tan et al. [32] that good collaboration springs from the manner of communication, sociocultural influence, and role expectation from the giver of care. The nurses, physicians, and other healthcare team members collaborated well with one another. They have always exhibited their functions that consistently meet the required standard of health services. Their competencies meet the standard set by Poitras et al. [33], namely, that interpersonal and professional communication is essential in collaborative Telehealth, as evidenced by the very high effectiveness of collaboration, as rated by the respondents.

The aspects of cure were fully emphasized in Telehealth, as shown by the very high effectiveness rate. This indicates that restoring a patient to its optimum level of functioning requires excellent collaboration between healthcare team members, which would allow the recovery of patients from illness. According to the Core, Cure, and Care Theory by Hall (1960) as cited in Gonzalo [21], health management needs the attention of other medical professionals such as physicians, pharmacists, medical technologists, and other laboratory technicians or personnel. Telehealth can be a mode of collaboration between health professionals.

In the area of nurturing patients, the level of perceived effectiveness of telehealth service as a whole (M=3.23, SD=0.47) patients rated high. When grouped according to sex, male (M=3.2, SD=0.5) and female (M=3.25, SD=0.46) patients rated high. In terms of age, 38 years old and below (M=3.25, SD=0.51) and 39 years old and above (M=3.21, SD=0.43),

patients rated high. Regarding the case, medical (M=3.22, SD=0.48) patients rated high, while surgical (M=3.31, SD=0.37) patients rated very high.

The results showed that the effectiveness of the nurturing aspect of care in Telehealth is high. Both males and females believed Telehealth nurtures patients to return to normal functioning. The young and older patients perceived it to be highly effective in nurturing. Medical patients also perceived Telehealth as highly effective, but surgical patients perceived its effectiveness as very high. The five groups of patients often perceive Telehealth as highly nurturing regarding diet, health teachings, exercise, and hygienic practices. From their responses, Telehealth has made them feel the purpose of life while using electronic means to maintain health and nurturing help the patient perform the patient's activities with the assistance of the nurse or other healthcare givers. Even though care is delivered online, patients still feel that the nurse and other healthcare team members could assist the patient in performing ADLs, contributing to the patient's comfort. Edemekong et al. [34] states that promoting comfort is one of the emphases in intervening with patients' daily activities, and Telehealth is a method that could help encourage comfort as one of the strategies for nurturing patients back to their normal functioning.

The results answer the call of the World Health Organization, nursing, and other medical care, including health promotion, wellness, preventing illness, restoring health, and care for a meaningful life or even a peaceful death. Nurturing patients supports the assertion of Berman et al. [22] that restoration of health focuses on the ill client and extends from early disease detection to recovery as one of the areas of health practice. The results conform to the claims of Jia et al. [35] that online health information provides patients with knowledge of their health and, in turn, changes their behavior. In the aspect of nurturing patients, Telehealth has improved the capacity to seek solutions and supports the declaration of Haleem et al. [17] that virtual care is the prime solution when obtaining health care is risky.

The care essence of nursing was perceived by patients to be high, as shown by the results, especially among surgical patients with a very high perception of the effectiveness of Telehealth. Care essence in nurturing [21] via Telehealth includes communication about diet, which patients perceive as high. The patients also perceived the health teaching via Telehealth as highly effective, the same as guiding about exercise and hygienic practices. Patients feel a purposeful life even when care is delivered via Telehealth.

In the area of cost, the level of perceived effectiveness of telehealth service as a whole (M=3.27, SD=0.42) patients rated very high. When grouped according to sex, male (M=3.29, SD=0.42) and female (M=3.27, SD=0.42) patients rated very high. In terms of age, 38 years old and below (M=3.3, SD=0.44) patients rated very high, while 39 years old and above (M=3.25, SD=0.4) patients rated high. Regarding the case, medical (M=3.27, SD=0.42) and surgical (M=3.29, SD=0.47) patients rated very high.

In terms of the cost, the effectiveness of Telehealth, as perceived by patients, was very high. This means that patients were satisfied with the cost they spent on their healthcare via Telehealth. This result does not conform to the assertion that healthcare costs are a burden [36]. The results show that cost is relatively easy as opposed to the claims of Montero et al. [56] about the cost of healthcare, where adult persons often skip the needed healthcare due to rising costs. The result supported the study of Chao et al. [37] that telehealth rates have declined as in-person care resumes. The very high result of the effectiveness of Telehealth in terms of cost and effective clinical care supports the view of Snoswell et al. [38] that Telehealth can maintain the efficacy of clinical care and balance with the cost as patients believed that Telehealth causes lesser consultation fees, saves on transportation costs, and uses affordable online platforms.

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Patients can also save costs in accessing laboratory services because they can access the results online even if they do not meet in the laboratory to get the results. They can also save the cost of ADLs as they will only stay at home, exercise, and plan their diet.

In the study, male and female perceptions do not matter in the effectiveness of Telehealth. Both rated the effectiveness as high, unlike in other countries [39], where telehealth effectiveness and efficiency differed in some settings. Both young and older people perceived the effectiveness as very high, which is not the same as Goldberg et al. [40] that young and old patients exhibit differences in their perception of Telehealth, which could be attributed to the older adults who are prone to illnesses while young ones are not. A study was conducted about the benefits of using Telehealth to treat older adult patients, with results including reducing deferred care and increasing timely care, improving efficiency for healthcare providers, enhancing communication with caregivers and patients, reducing patient travel burdens, and facilitating health outreach and education [40]. The difference is also seen among patients from different countries. Asian patients utilize more telehealth services than Hispanics [41].

According to a study, it was noted that when face-to-face consultation resumed, telehealth visits started to decline. However, the usage of telehealth consultation services is still high compared to before the pandemic [37]. In Bangladesh, younger patients utilize Telehealth more than older ones. Researchers concluded that it might be because the young are highly acquainted with technology and know where to seek online health-related services. Also, males were found to have more access to Telehealth than females. Of 186 participants, males account for 172, and females only have 14. There was a correlation between gender disparity and telehealth use. Although the number of telehealth users has increased during the pandemic, males consume services more than females [42]. Telehealth can be equivalent to or more clinically effective than usual care [38]. Telehealth has also been used as a communicator to bridge the bias in healthcare delivery in both unguarded and deprived populations [43].

Telehealth has become a rapidly expanding component of the healthcare system, according to a study on trial using telehealth technology to link caregivers with dementia care experts for in-home caregiving support [44]. A recent study shows that telehealth services and technologies are an advisable intervention for promoting older patients' self-care management and have shown effectiveness in improving self-care skills, self-monitoring behaviors, and clinical outcomes among older adults with chronic conditions in different settings [45]. According to Santos et al. [46], Telehealth is an effective tool for caring for people with Diabetes Mellitus and Hypertension, providing a 0.353% reduction in HbA1c compared to traditional care. Telehealth use for in-home caregiving support has grown across all surgical specialties in response to the COVID-19 pandemic [44].

In the Philippines, about 385 respondents from the National Capital Region agreed with their awareness of telehealth services and indicated their positive experience with telehealth use and its accessibility [47]. Telehealth strategy has been introduced as an instrument with an interesting perspective to contribute to and support health care. Rural and remote areas need access to specialty care to ensure patients receive the proper care on time, whenever needed, with respect and dignity [48]. Also, a study was conducted by four pediatric occupational therapists from Batangas City; it concluded that among the three themes emerged that Telehealth can be a permanent alternative service delivery model for occupational therapy and an excellent opportunity for professional development [49].

Overall, the theory of Core, Cure, and Care is helpful in the management of patients needing health services. It was validated that there was no difference in the perceived effectiveness of telehealth services among adult patients with healthcare needs. Along with the

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3 C's is the cost, which often burdens patients more. The health care professional must investigate the aspects of patient, collaboration, and nurturing and the cost of health care. This covers the whole element of health care as professionals strive to restore the patient to its optimum functioning or at least maintain the minimum functions of the body. The core, cure, and care apply not only to nurses but also to other members of the health care team.

Table 2. *Level of Perceived Effectiveness of Telehealth Service*

Variable	Patient Receiving Care			Collaborative Intervention			Nurturing Patients			Cost			Effectiveness		
	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int
Sex															
Male	3.17	0.41	Hi	3.38	0.39	VH	3.20	0.50	Hi	3.29	0.42	VH	3.27	0.33	VH
Female	3.26	0.42	VH	3.41	0.43	VH	3.25	0.46	Hi	3.27	0.42	VH	3.30	0.32	VH
Age															
≤38 yo	3.25	0.43	Hi	3.38	0.42	VH	3.25	0.51	Hi	3.30	0.44	VH	3.30	0.32	VH
≥39 yo	3.21	0.40	Hi	3.41	0.41	VH	3.21	0.43	Hi	3.25	0.40	Hi	3.28	0.33	VH
Case															
Medical	3.21	0.41	Hi	3.39	0.42	VH	3.22	0.48	Hi	3.27	0.42	VH	3.29	0.32	VH
Surgical	3.37	0.41	VH	3.43	0.41	VH	3.31	0.37	VH	3.29	0.47	VH	3.35	0.35	VH
Whole	***3.23***	***0.41***	***Hi***	***3.40***	***0.41***	***VH***	***3.23***	***0.47***	***Hi***	***3.27***	***0.42***	***VH***	***3.29***	***0.32***	***VH***

Note: *High (Hi); Very High (VH)*

Difference in the Level of Perceived Effectiveness when grouped according to the Demographics

Table 3 presents the difference in the level of perceived effectiveness of telehealth services. The results show that there was no significant difference in the level of perceived effectiveness of telehealth service when adult patients are grouped according to sex [U=2595.000, p=0.342], age [U=3012.000, p=0.707], and case [U=923.500, p=0.605].

The results show there is no significant difference in the level of perceived effectiveness when the patients are grouped according to variables sex, age, and case. This indicates that regardless of sex, age, and case, the patients would avail any mode of treatment in finding treatments, though delivered online, to solve their health problems [25]. These patients' healthcare needs made them perceive telehealth as effective, especially during the stringent community restrictions. Collaboration with health professionals in any mode, like telehealth, relieves their health conditions [50].

Table 3. *Difference in the Level of perceived Effectiveness of Telehealth Service*

Variable	U	z	p
Sex	2595.000	-0.950	0.342
Age	3012.000	-0.376	0.707
Case	923.500	-0.518	0.605

Note: the difference is significant when p≤0.05

Challenges of the adult patients with healthcare needs in availing the telehealth services

Table 4 presents the challenges in availing the telehealth services. The following are the top 3 challenges: 83.1% (f=123) of the respondents answered slow internet connectivity or no internet connection, 60.1% (f=89) of the respondents answered lessens proper evaluation, and 54.7% (f=81) of the respondents answered, hinders quality patient assessment.

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Although Telehealth is perceived as very high in effectiveness, challenges still interfere with the delivery of care. As shown below in Table 3, the most common challenge is a slow internet connection, followed by lessened proper evaluation that, in turn, hinders the quality of patient assessment, as opposed to the declaration of World Health Organization [6] that the main challenge in utilizing telehealth services is the need for more guidelines and policy implementation. This is also not in conformity with the study [51] that the main issues in national research involving telehealth services include telehealth cost, clinical uncertainty, lack of digital infrastructure and literacy, cyber security accountability, and proper healthcare law implementation.

Another challenge is keeping the data safe and private, not knowing how to connect, and inefficient delivery of healthcare. These challenges conform with the claim that data security cannot be ensured and the industry needs to work with professionals and patients to ensure digital inclusion, data security, and solutions that are intuitive, flexible, and tailored to users' needs and cost are reasonable [50]. Other challenges are unsatisfied with the treatment, not age-friendly and cost too much. Some may find the treatment unsatisfactory because they might have encountered services that are not therapeutic, as claimed by Cole et al. [52], that there should be adequately trained healthcare providers. There are respondents who were not satisfied with the treatment, although generally, the rate of effectiveness was very high. This is a challenge to Blandford's et al. [50] claim that in Telehealth, organizations, institutions, and independent individual practitioners must collaborate and learn what works well, where, when, why, and how. The third challenge is the hindrance to patient assessment. Traditional examinations in F2F use instruments to hear and listen to sounds produced by the body. However, in Telehealth, malfunctions of electronic devices such as electronic phones, digital stethoscopes, and other devices interfere with physical examination [11].

The respondents also stressed the vulnerability of patient privacy because some telehealth users are not experts in information technology. Some adults also felt they had difficulty connecting; as Kim and Ang [53] described, physicians view Telehealth as challenging because some adults who need the equipment to connect are economically deprived. While some described Telehealth as inefficient delivery in healthcare, some respondents described it as unsatisfied with patient treatment, which is the same as Ellimoottil's et al. [54] assertion that Telehealth negatively engages current face-to-face clinical practice and workflow. The description of dissatisfaction with in-patient treatment also corresponds to Wootton et al.'s [55] claim that although video-based counseling methods are effective and convenient, technology negatively impacts appointment flow, intervention effectiveness, and the satisfaction of patients and healthcare providers. Added to the challenges in Telehealth, some respondents described Telehealth as not age-friendly, maybe because there were older ones who claimed that they have difficulty connecting [53] and as opposed to the claims of Snoswell et al. [38] that Telehealth can balance with the cost.

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Table 4. *Challenges in availing the telehealth services*

Items	f	%
Slow internet connectivity or no internet connection	123	83.1
Lessens proper evaluation	89	60.1
Hinders quality patient assessment	81	54.7
Vulnerability of patient's privacy and security	73	49.3
Not knowing how to connect	70	47.3
Inefficient delivery of healthcare	63	42.6
Unsatisfied with the treatment	60	40.5
Not age-friendly	60	40.5
Costs too much	55	37.2
Lack of adequate equipment such as smartphones, tablets, laptop, etc.	53	35.8

Theoretically, the study assumed that the perceived effectiveness of telehealth services may differ in terms of age, sex, and cases of the patients. This study is anchored in the 3 C's theory of Hall (1960) as cited in Gonzalo [21]: the Care, Cure, and Core claiming that healthcare revolves around the patient, the manner of care given by the nurse, and the collaborative functions of other members of the health care team. Considering that there was no significant difference with the results, the study does not validate the veracity of the theory. However, the study calls for future researchers to further conduct studies on the level of perceived effectiveness of telehealth services employing the theory of Care, Cure, and Core to validate the claim of the theory.

4.0 Conclusion

The effectiveness of Telehealth services among adult patients plays a vital role in the promotion, prevention, curative, and rehabilitative aspects of patient care. The patients experienced positive results of telehealth in the aspect of patient care because they receive urgent answers for their medical problems. These patients, as clients, believed that Telehealth could provide services and a diagnosis to resolve the condition, and efficiently mobilize healthcare resources. Patients who availed of telehealth services found it effective in-patient care by promoting independence on the part of the patient in terms of self-care, enhancing the collaborative function of the members of the healthcare team, nurturing the clients, and minimizing the cost of health services. Among the four aspects investigated, one important aspect of delivering health services via Telehealth is good communication and relationship between patients and healthcare providers. There are challenges in delivering telehealth services, but other means exist to make essential health services available. Fostering satisfactory professional relationships with patients and good communication leads to life satisfaction while experiencing a purposeful life.

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