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An Assessment of Jamaicans use of Telemedicine during Coronavirus disease 19 (COVID-19) Pandemic

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Abstract

Coronavirus disease 19 (COVID-19) had led to serious clinical manifestations. COVID-19 infected around 173,331,478 people in the current situation, and it is responsible for 3,735,571 deaths worldwide, as reported by the World Health Organization on June 8, 2021. Telemedicine has the potential to become a key technology for providing medical care to patients in Jamaica and around the world to maintain social distances, thus reducing the transmission of the virus among patients, families, and doctors. Therefore, the main objectives of this paper are to present a systematic review: (1) on the assessment of telemedicine during the COVID-19 pandemic, (2) on the focus on the degree of telemedicine among Jamaicans during the COVID-19 pandemic and, (3) to determine if there is a preference between telemedicine and direct patient care. This research conducted was a quantitative survey to collect data from Jamaicans utilizing a co-relational research technique. The researchers implemented a non-probability sampling to procure the data from 518 sampling respondents across the fourteen parishes in Jamaica. Nevertheless, the researchers combined the Kingston and St. Andrew parishes to make it thirteen parishes. Google Forms served as a means to collect the data using a systemized survey. The data were converted from Google Forms to Statistical Packages for the Social Sciences (SPSS) for Windows version 27.0 with a 95% confidence interval. 70.5% (n=365) of the sampled respondents indicated that they have never used telemedicine. Additionally, 80.9% (n= 419) prefers face to face patient care, 41.7% (n=216) respondents and 65.8% (n=341) agrees that it is relevant during the COVID-19 pandemic. The government should introduce measures that address the decline in the usage of telemedicine.

Keywords: Telemedicine, COVID19, Jamaica, Pandemic.

Introduction

One of the significant challenges facing humankind in the21st century is to make high-quality health care available to all. The World Health Organization (WHO) confirmed this vision in its health-for-all strategy in the21st century. Realizing this vision will be difficult, perhaps impossible, because of the burdens imposed on a growing world population by old and new diseases, rising expectations for health, and socioeconomic conditions that have, if anything, increased disparities in health status between and within countries (Craig & Patterson, 2005).

Usually, part of the difficulty in achieving equitable access to health care has been that the provider and the recipient must be present in the same place and at the same time. However, recent advances in information and communication technologies have created unprecedented opportunities for overcoming this by increasing the number of healthcare delivery options. These opportunities apply both to developing countries with weak or unstable economies and industrialized countries. The possibilities for using information and communication technologies to improve healthcare delivery ('health telematics') are attracting increased attention. In its health for all (HFA) strategy, the WHO recommends that the United Nations agency and its member states should: *integrate the acceptable use of health telematics in the overall policy and strategy for the attainment of health for all in the 21st century, thus fulfilling the vision of a world in which the benefits of science, technology, and public health development are made equitably available to all people everywhere*(Craig & Patterson, 2005).

Coronavirus disease 19 (COVID-19) is a family of viruses that cause acute respiratory disease. This virus has become a pandemic with severe clinical manifestations that affect millions of people worldwide. There are 173,331,478Covid-19 infected people in the current situation, with 3,735,571 deaths worldwide, as reported by the World Health Organization on June 8, 2021. As a result of the pandemic, there has been a rise in telemedicine because people are having to state home (Malcolm, 2020; Pate, 2020). This concept of telemedicine (e-health or telehealth) has been promulgated by the Jamaican government dating back to 2018 (Jamaica Information Service, 2020; Ministry of Health and Wellness, 2021) and even longer before that time in the United States, which goes back to the 1920s (Board on Health Care Services; Institute of Medicine.2012) and even to ancient times (Shirzadfar and Lotf, 2017). Ryu (2010) indicated that modern telemedicine has been traced to "…Europe and the fact that those by a Dutch physician, Willem Einthoven, had been by long-distance transfer of electrocardiograms in 1905" (p. 65). Such historical context means that e-health is a relatively new practice in Jamaica from an already old reality. It is even more germane today because of social distancing, staying at home, and the COCID-19 pandemic (Pate, 2020). However, the World Health Organization (2009) ascribed the coined concept to the 1970s (WHO, 2009), and it denotes '"healing at a distance. According to Pate (2020) "Generally telemedicine allows health care professionals to evaluate, diagnose, and treat patients at a distance using telecommunications technology. Telemedicine

involves the use of electronic communications and software to provide clinical services to patients without an in-person visit", which is a relatively new phenomenon in Jamaica (Davis, 2019) to which people are 'warming up' or accepting (The Gleaner, 2019).

Table 1 showing worldwide statistics of some countries in the world as of June 8, 2021

Countries	Confirmed Cases	Deaths
United States of America	33,042,622	592,114
India	28,996,473	351,309
Brazil	16,947,062	473,404
France	5,611,217	109,209
Russia	5,145,843	124,496
Italy	4,233,698	126,588
United Kingdom	4,522,480	127,841
Germany	3,702,688	89,384
Canada	1,392,563	25,724
South Africa	1,699,849	57,063

Table 2 Statistics from the Ministry of Health and Wellness on June 7,2021, is as follows:

Number of people infected	Number of active cases	Total number of deaths
49,031	21,034	974

Telemedicine is the practice of medicine using technology to deliver health care remotely; it involves audio, video, or computer technology to examine, monitor, and manage patient conditions. This new technology combines the exchange of knowledge between health professionals and remotely gives patients access to quality services. Its applications help to reduce the length of time waiting to see a doctor as well as enabling patients to adhere to the social distancing rule; it also improves the availability of various medical services and health care despite geographic and economic barriers such as social isolation, transportation difficulties, and financial constraints. Telemedicine also helps patients with minor diseases to get the supportive care they need while minimizing their exposure to other patients with acute conditions. The use of eHealth apps, computers, or smartphones can even facilitate doctors to notice patients with early signs of COVID-19 before they gain the hospital (Malhotra, Ramachandran, Chauhan, Soni & Garg, 20210).

An article in the JIS Daily Newsletter dated October 10, 2020, stated that in 2018 the Government of Jamaica launched a telemedicine pilot project for the benefit of persons in remote areas and those with mobility issues; however, telemedicine has become increasingly important, mainly due to the onset of the coronavirus and the accompanying needs for social distancing (Get the Facts, 2020). On reviewing the literature, no study emerged in Jamaica on telemedicine (e-health), particularly during the COVID-19 pandemic.

This research objective aims to determine the use of telemedicine amongst Jamaicans during the COVID-19 pandemic. A group of volunteers aged 18 to over 65 was randomly selected to help the researchers achieve this goal. This research is essential since its findings will give information on the use of telemedicine during the pandemic. It will also determine the likely effect of COVID-19 on Jamaica's secondary and tertiary healthcare system and the relevance of telemedicine. The findings and analysis should garner enough information for policymakers to implement telemedicine as an option in all healthcare settings so that during this pandemic (Bhaskar, Nurtazina, Mittoo, Banach, & Weissert, 2021). The researchers believe that telemedicine could play an essential role in expanding the outreach to remote areas and those from vulnerable backgrounds and vulnerable communities.

Theoretical Framework

In 1975 R.W. Rogers developed the Protection Motivation Theory. This theory describes how individuals are motivated to react in a self-protective way towards a health threat. It also put forward three crucial components: (1) the magnitude of noxiousness of a depicted event; (2) the probability of that event's occurrence; and (3) the efficacy of a protective response. Thus, the psychological predictors (severity, vulnerability, response efficacy, and self-efficacy) should be significantly related to intentions, which conciliate their influence on behaviour performance (Rad et al., 2021). It is also a continuum theory: identifying variables that influence individual actions and quantifying them to predict a particular response's likelihood.

This study seeks to investigate Jamaicans use of telemedicine during the COVID-19 pandemic and the higher one's engagement towards the acceptance of telemedicine health services. The belief is that if telemedicine health services aid in improving one's health, then the use of these services among patients will increase. The use of telemedicine is also dependent on the self-efficacy of the individual. In other words, the individual has to have a favourable judgment towards his or her capabilities to use the software to gain telemedicine health services (Rahi, Khan, & Alghizzawi, 2021). Consequently, there is a relation between the Protection Motivation Theory and Jamaican use of telemedicine during the COVID-19 pandemic.

Literature Review

The onset of the coronavirus disease 2019 (COVID-19) has produced an immense global health crisis that has severely impacted the way we perceive our world and even our daily lives. The COVID-19 pandemic has altered different aspects of society while causing an enormous burden on our primary health care system. Jamaica received its first case on March 10, 2020 (MOH, 2021), which later prompted strict measures to decrease the spread of infections. Additionally, the government took steps to lock down the country, reducing social interactions among many individuals. The current COVID 19 pandemic has directed healthcare providers and patients to seek alternate forms of communication, including healthcare through the internet, social media, and telephone to avoid the spread of infection.

For people who have not contracted the COVID-19 virus (e.g., Elderly people and those with underlying diseases), it is impertinent that they receive daily care without their health being compromised by being exposed to other patients in the hospital. Therefore, unique and innovative solutions are of utmost importance in tackling patients with COVID-19 and people who require healthcare. Telemedicine is an innovative way to provide new technological options. Although the ultimate solution for COVID-19 will be multifaceted, it is one of the effective ways to use existing technologies to facilitate optimal service delivery while minimizing the hazard of direct person-to-person exposure (Monaghesh & Hajizadeh, 2021).

Telemedicine is a modern approach that is both patient-centred and efficient for both healthcare providers and their patients (Daragmeh, Sági, & Zéman, 2021; Wan, & Chin, 2021). Telemedicine delivers health care services that utilize information and communication technologies (ICT) to collect valid and correct medical information. Telemedicine services are delivered using real-time or store-and-forward techniques. With the ever-increasing evolution and downsizing of portable electronics, most families have at least one digital device, such as smartphones and webcams, to communicate between patients and their healthcare providers. Real-time telemedicine, such as video conferencing, provides health care programs for hospitalized or quarantine persons to reduce the risk of exposure to others and employees (Alonso et al., 2021). Healthcare providers who are in quarantine can apply these services to care for their patients remotely. In addition, covering multiple sites with a tele-physician can address some of the challenges of the workforce (Monaghesh & Hajizadeh, 2020).

Although some limitations to implementing telemedicine exist due to the inherent nature of this remote approach to medicine, there are also solutions like remote blood pressure monitoring systems that transmit measurements over Wi-Fi or Bluetooth are also available. Apple watches can measure heart rate, and some models can conduct EK. In addition to these patient-operated devices, several professional devices providers can use when conducting a remote consultation, for example, with a specialist. Some of these professional devices are digital scopes that provide high-quality images or sounds from many body parts, and the PINS Bluetooth deep brain stimulator detects brain signals from deep in the brain and sends electrical impulses to block abnormal nerve signals (Alonso et al., 2021).

Some of the benefits in using telemedicine, especially in non-emergency cases and in situations that do not require direct patient-provider interactions, are ; (1) reduction in the usage of resources in health centres, (2) improve access to care while minimizing the risk of direct transmission of the COVID-19 infectious agent from person to person, (3) beneficial in keeping people safe, including health workers, patients, and the general public, and (4) provide caregivers with comprehensive access(Martin, 2020).

Methods and Materials

This study employed a descriptive cross-sectional research design by way of non-probability sample design (Babbie, 2010; Creswell, 2013; Neuman, 2014; Polit, 1996; Rea& Parker, 2014). Quantitative research provided the aim of the research question "An assessment of Jamaicans' uses of telemedicine during the Covid-19 pandemic". According to (McLeod, 2021), quantitative research involves objectively collecting and analysing numerical data to describe, foretell and control the variables of interest. The goals of quantitative research include testing final relationships between the different variables, generalizing results to broader populations, and making predictions. The composition of this study is a cross-sectional study. The population was selected using nonprobability sampling. Data were collected from May 30, 2021, to June 21, 2021. The study involved data collection from 518 participants. It included both females and males from the fourteen parishes across Jamaica: Hanover, St. Elizabeth, St James, Trelawny, Westmoreland, Clarendon, Manchester, St Ann, St. Catherine, St Mary, Portland, St. Thomas, Kingston, and St. Andrew. The participants were informed about the purpose of the study and its essence. Information obtained was kept confidential, and persons were not required to give personal information. Researchers created a survey questionnaire inclusive of thirteenclose-ended questions using Google Forms. The distribution of the survey questionnaire was through messages containing the link to the survey with details of the study and instructions on social media platforms to be completed by individuals that are eighteen years and older. The collected data display occurred through tables with the further analysis done with Google Forms, Microsoft Office Excel, and IBM Statistical Packages for the Social Sciences (SPSS) for Windows 25. Data analysis occurred using frequencies and percentages, cross-tabulation, and chi-square.

Results

Table 3 displays the demographic characteristics of the sampled respondents. Of the sampled respondents (=518), most were females (69.7%), ranging between the ages18-25 (45.2%), and lived in Kingston and St. Andrew (23.2%).

Table 3 Demographic Characteristics of the Sampled Respondents, n=518

Details	**% (n)**
Gender	
Female	69.7 (361)
Male	30.3 (157)
Age Cohort	
18-25 years	45.2 (234)
26-33 years	25.7 (133)
34-41 years	12.5 (65)
42-49 years	10.0 (52)

50 and older years	6.6 (34)
Area of Residence (Parish)	
Clarendon	10.4 (54)
Manchester	12.0 (62)
Kingston and St. Andrew	23.2 (120)
Hanover	2.3 (12)
St. Ann	1.7 (9)
Portland	2.9 (15)
St. Thomas	1.4 (7)
St. Mary	3.9 (20)
St. James	4.1 (21)
St. Catherine	21.2 (110)
Trelawny	3.1 (16)
Westmoreland	7.9 (41)
St. Elizabeth	6.0 (31)

Table 4 shows that most respondents indicated that telemedicine is relevant during the Covid 19 pandemic (65.8%), showing agreement that remote delivery of healthcare services is a safe way to maintain social distance (73.7%).

Table 4 Relevance of Telemedicine during the Covid 19 pandemic, n=518

Details	**%(n)**
The relevance of telemedicine during the Covid-19 pandemic	
No	12.4 (64)
Yes	65.8 (341)
Maybe	21.8 (113)
Do you think remote delivery of healthcare services is a safe way to maintain social distance	
No	10.2 (53)
Yes	73.7 (382)
Maybe	16.0 (83)

Table 5 presents the frequency of the usage of telemedicine during the COVID 19 pandemic. From March 2020 to the present (22.8%) of the respondents never used video conferencing for healthcare consultations. The finding reveals that (70.5%) never used telemedicine before. Additionally, (73.2%) of the respondents do not use telemedicine to consult their physicians for treatment and diagnosis.

Table 5 Frequency of usage of Telemedicine since COVID 19 pandemic, n=518

Details	% (n)
From the period March 2020 to the present, how often do you use video conferencing for healthcare consultations?	
Never	69.9 (362)
Not often	22.8 (118)
Very often	7.3 (38)
How often do you use telemedicine	
Never	70.5 (365)
Not often	23.4 (121)
Very often	6.2 (32)
Do you use telemedicine medium to consult your physician for treatment and diagnosis	
No	73.2 (379)
Yes	21.0 (109)
Maybe	5.8 (30)

Table 6 shows the access to resources to use Telemedicine. The majority of the respondents have access to the internet (97.3%). In agreement, the majority have access to a smartphone or a computer to access telemedicine (95.9%). (85.5%) of the respondents indicated that their healthcare provider does not manage their vitals remotely.

Table 6 Access to resources to use Telemedicine, n=518

Details	% (n)
Do you have access to the internet	
Yes	97.3 (504)
No	2.7 (14)
Do you have access to a computer or smartphone	
Yes	95.9 (497)
No	4.1 (21)
Does your healthcare provider monitor your vital signs e.g., temperature or blood pressure remotely while you are at home	
Yes	14.5 (75)
No	85.5 (443)

Table 7 presents the preference/ rating of telemedicine. (80.9%) of the respondents prefer face-to-face consultations rather than telemedicine. Majority rated the effectiveness of telemedicine raging between 5-6 (41.7%)

Table 7 Preference/ Rating of telemedicine, n=518

Details	**% (n)**
Do you prefer face to face interaction or telemedicine?	
Telemedicine	19.1 (99)
Face to face	80.9 (419)
On a scale of 1to10 how effective is telemedicine	
1-2	12.4 (64)
3-4	13.5 (70)
5-6	41.7 (216)
7-8	24.1 (125)
9-10	8.3 (43)

Table 8 presents a cross-tabulation association between the do you think telemedicine is relevant during the Covid 19 pandemic and March 2020 to present how often you use video conferencing for healthcare consultations. The findings revealed that: There is no statistical association between the "do you think telemedicine is relevant during the Covid 19 pandemic?" and "from the period March 2020 to present how often do you use video conferencing for healthcare consultations?"(X^2 critical= 11.341 > X^2 obtained 11.143, P =0.023) Hence, we failed to reject the null hypothesis.

H_0: There is no statistical association between the do you think telemedicine is relevant during the covid 19 pandemic and from the period March 2020 to present how often do you use video conferencing for healthcare consultations.

H_1: There is a statistical association between the do you think telemedicine is relevant during the covid 19 pandemic and from the period March 2020 to present how often do you use video conferencing for healthcare consultations.

Table 8: Cross-tabulation between do you think telemedicine is relevant during the covid 19 pandemic and from the period March 2020 to present how often do you use video conferencing for healthcare consultations.

		Do you think telemedicine is relevant during the COVID 19 pandemics?				
		No	**Yes**	**Maybe**	**Total**	**X^2 P-value**
From the period March 2020 to the present, how often do you use video conferencing for healthcare consultations	Never	84.4% (54)	66.0% (225)	73.5% (83)	69.9% (362)	11.341, 0.023
	Not often	10.9% (7)	26.7% (91)	17.7% (20)	22.8% (118)	
	Very often	4.7% (3)	7.3% (25)	8.8% (10)	7.3% (38)	
Total		64	341	113	518	
		100.0%	100.0%	100.0%	100.0%	

Discussion

Illness is an inevitablepart of life. There are many treatments and cures available for different illnesses. A population filled with sick persons can affect the life expectancy rate of that country, productivity, and general wellbeing. Visiting the doctor's office whenever persons are sick is the usual way of receiving health care. A person's health is a critical factor in society. Since the pandemic, the behaviour of people has changed. They have to adapt to the new norms to keep themselves and their families safe. They have to adapt to new guidelines stipulated by the (Center for Disease Control and Prevention (World Health Organization) and the Jamaican (Ministry of Health and Wellness), such as social distancing, wearing a mask, washing hands, or sanitizing upon entering a building and temperature checks. "Teleconsultations are an important instrument to utilize during a pandemic. They are a safe and effective way to assess suspected cases and pilot patients' diagnosis and treatment. This approach helps with minimizing the risk of disease transmission," stated by Pan American Health Organization.

In an article published by Mcsystem (Telemedicine-providing a cost-effective way to health care, 2021), an analysis done stated that "in 2018, the Minister of Health and Wellness, Dr Christopher Tufton, began a telemedicine project at a place called Kitson Town in the constituency of his which is West Central St Catherine. This project was to permit persons who needed to consult specialist doctors with the use of telemedicine technology. The movement's main goal was to reduce the time to deliver patient care by linking them via teleconferencing/ video conferencing with health professionals from different health centres and hospitals". Telemedicine is another way to help contain the spread of the virus, which will later affect the public's health. The research highlights the impact of Covid-19 and the use of telemedicine during the pandemic. Furthermore, it demonstrates the need for initiatives that support daily activities while minimizing the spread of the virus. One such initiative is the use of telemedicine.

An article published by the Jamaica Information Service, "Get the Facts-Telemedicine"(Jamaica Information Service, 2021), assed that" in 2018 the Government of Jamaica (GOJ) initiated a telemedicine pilot project for persons in distant areas and those with travel issues. The project is still in progress, and it is to allow such persons to access health services easier. Even though it is not extensive, the use of telemedicine in Jamaica is becoming more dominant. The growing trend is a result of Covid-19, which calls for the need for social distancing. Due to this, approximately 8,000 persons in Jamaica tried seeking medical attention through telecommunications technologies between March and May 2020".

For this study, 69.7% of the respondents are females who have used telemedicine as a way to access healthcare since the current pandemic. The remaining 30.3% are males. In an article published by The Gleaner (Street, 2021), Dr Street enlightened that "it is known that men visit the doctor less often than women do. Multiple reasons have been suggested for this phenomenon. Men consult doctors about 20-30 per cent less often than women do. They often wait for a longer period hoping the problem will get better on its own. Women are more likely to say that they are

not well even when they are healthy. On the other hand, men are likely to underestimate the state of their health". The age group that uses telemedicine the most since the pandemic is between ages 18-25, represented by 45.2%. Ages 26-33 has 25.7%, 34-41 has 12.5%, 42-4910.0% and ages 50 and older is represented by 6.6%. There is a difference seen in percentage as the age increases. Young adults are the persons who use telemedicine mainly due to their access and use of technology.

The study occurred in the fourteen parishes across Jamaica. Clarendon's responses were represented by 10.4%; Manchester had 12.0%, Kingston and St. Andrew had 23.2 %, Hanover had 2.3%, St. Ann was represented by 1.7%, and Portland had 2.9%. The remaining seven parishes, like St. Thomas, were represented by 1.4%, St. Mary was represented by 3.9%, St. James had 4.1%, St. Catherine had 21.2%, Trelawny had 3.1%, West more land had 7.9%, and St. Elizabeth was represented by 6.0%. The data showed that Kingston and St. Andrew are the leading parishes for the usage of telemedicine during the Covid-19 pandemic. Kingston is the capital of Jamaica, and therefore resources such as internet services are easily accessible. The parish with the lowest percentage is St. Thomas**.** In an article written in the Jamaican Observer (Smith, 2021), it is argued that "St Thomas is the least economically developed parish in entire Jamaica. To increase development in the parish, they suggested that there is a need for a good highway, good roadways, and the National Housing Trust to build more homes in the parish to add some life to it".

The data demonstrated that the relevance of telemedicine during the Covid-19 pandemic is warranted. This relevance was represented by 65.8% of the respondents. 21.8% of respondents said telemedicine is a little relevant, and 12.4% stated no. With a majority stating that it is relevant, the majority stated that remote delivery of healthcare services is a safe way to maintain social distance, represented by 73.7%. 16.0% responded with maybe, and 10.2% responded no. From March 2020 to the present, 69.9% of the respondents stated that they never used video conferencing to do medical consultations. 22.8% responded with not often, and the remaining 7.3% stated very often.

When the question of how often do you use telemedicine was asked, most respondents said "never," represented by 70.5%, 23.4% responded with not often and very often has 6.2%. 73.2% of the respondents do not use telemedicine to consult health professionals, 21.0% use it, and 5.8% use it sometimes. With all the information gathered from this study, it can be said that the majority of the respondents do not use telemedicine even though they believe that it is relevant. Therefore, more people will come to visit the doctor's office, which may lead to increases in the number of Covid-19 cases. Access to resources can affect a country's productivity. Equitable allocation of resources should exist among persons. We live in a technologically advanced world, and as such, need access to specific resources. The majority of the respondents have internet access, whether Wi-Fi or data service, represented by 97.3%. The remaining 2.7% responded with no. with the majority having access to internet services, 95.9% which is also majority has access to a smartphone or computer to use telemedicine. An article written on Statista reported

that in the year 2017, more than 55% of the Jamaican population accessed the internet, which is up from about 27.7% recorded in 2010 (Internet penetration in Jamaica | Statista, 2021). 85.5% of the respondents stated that their health care provider does not monitor their vitals, being that they are in two different spaces. The remaining 14.5% responded by saying yes.

When asked about preference, the majority, 80.9% of the respondents, reported they prefer face-to-face over telemedicine, represented by the remaining 19.1%. Therefore, the use of telemedicine is because some people prefer another option besides face-to-face. The rating for telemedicine on a scale of one to ten shows the majority giving it a fair rating which ranges between 5-6 with 41.7%. 7-8 is rated by 24.1% of the respondents, 3-4 is 13.5%, 1-2 has 12.4%, and 9-10 is represented by 8.3%.

Conclusion

Telemedicine affects patient satisfaction and engagement. Conclusive evidence reveals that most Jamaicans do not utilize telemedicine software; they prefer face-to-face patient care while being cognizant that telemedicine can be moderately effective and is a safe way to maintain social distance. Measures should involve more Jamaicans in utilizing telemedicine during the COVID-19 pandemic. In 2018 the Government of Jamaica (GOJ) launched a telemedicine pilot project to benefit persons in remote areas and those with mobility issues, which is why 80.9% (419) preferred face-to-face based on the researchers' evidence. Nevertheless, it is an ongoingaim to allow such persons to access health services more efficiently.

There is little doubt that the use of telemedicine is effective. However, the transition to a world where telemedicine is employed to the maximum will not be realized if governments and healthcare organizations do not produce strategies to encourage its development. Wootton has summarized the critical issues that will need to be addressed in such strategies as part of a fourfold commitment: to encourage and provide funding for telemedicine research; to develop an implementation plan, once clinical effectiveness and cost-effectiveness have been demonstrated); to assess the significant structural changes required within organizations to incorporate this method of delivering health care; to develop a process for training, formulation of practice guidelines, quality control, and continuing audit.

If we were to design this study again, there are a few adjustments to be made. Most significantly, we would go for a more extended period to capture participation through the whole research process from initial design through to dissemination. Secondly, more considerations could have been taken for older adults who were incapable of using Google Forms VIA technological devices. Instead, there could have been printed questionnaires for older adults and persons who had an absent internet connection. As a result, this would expand participation.

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