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Review Article

An outline on the global insights of implementation and challenges in primary healthcare telemedicine

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ABSTRACT

Background: The utilization of telephone consultation (TC) has seen a significant increase of up to 86% since the start of the COVID-19 pandemic. In order to bridge the existing knowledge gap by examining the usage and efficacy of telephone or virtual consultations in a clinical setting during the COVID-19 lockdown, the objective of the current review is to gain a comprehensive understanding of the advantages and limitations of TC in the light of physicians and familial perspectives to enlighten future healthcare planning and decision-making.
Methods: The data utilized in this research spanning the period of COVID-19 and other studies related to TC that occurred before the onset of the pandemic were gathered from a variety of reputable sources, such as Pubmed, Pubmed Central, Google Scholar, Research Gate, and Science Direct with the pre-established eligibility criteria and relevant keywords.
Results: Studies revealed that the incorporation of teleconsultation has demonstrated numerous benefits for patients, including effective handling of data, fair accessibility, and adherence to standardized care protocols. Nonetheless, the implementation of TC also presents obstacles such as insufficiently trained staff, technical hurdles like connectivity issues and unreliable internet connections, and the possibility of erroneous diagnoses.
Conclusions: During the COVID-19 phase, TC has proven effective with fewer limitations that can be minimized by training the healthcare staff and overcoming technical issues.

Keywords: Teleconsultation, Telemedicine, COVID-19 pandemics, Telehealth, Misdiagnosis

INTRODUCTION

The COVID-19 pandemic has brought about a transformative alteration in healthcare, necessitating innovative approaches to maintain providing uninterrupted medical assistance while adhering to social distancing protocols.[1] Recently, telephone consultation (TC) has emerged as a crucial tool, enabling healthcare providers to remotely deliver services using information and communication technologies.[2] According to the World Health Organization report, the usage of TC increased up to 86% among people worldwide.[3] The concept of telemedicine encompasses a wide range of remote healthcare services facilitated by digital communication technologies.[4] Among the benefits of TC, it is highly accessible and convenient, allowing patients to access healthcare safely without having to navigate the challenging decision of prioritizing their health needs over concerns of contracting COVID-19.[5,6]

Moreover, it facilitates the discovery of new dimensions to professional practice.[7,8] Governments worldwide invested in telemedicine to manage the pandemic and reduce patient visits to emergency departments, thereby curbing the spread of the virus.[9,10]

According to research conducted in Pakistan, two proficient physicians promptly delivered test outcomes to individuals who had been diagnosed with a positive case of COVID-19 utilizing the assistance of TC. Furthermore, it was observed that 62.9% of the initial positive patients were successfully contacted during the TC process. Among the patients, 41.8% were asymptomatic, while 52.9% experienced mild to moderate illness. However, due to the rapid surge of cases, it became evident that the existing small team could not effectively manage the increasing workload, and various barriers may hinder its widespread adoption.[11] Obstacles in telemedicine include adaptability, connectivity, reimbursement, data security, limited patient assessment, absence of visual cues, impact on relationships, health information quality, and organizational challenges.[12-14]

In this respect, the objective of this literature review is to bridge the current knowledge gap in the utilization, effectiveness, and challenges of telemedicine in a clinical setting during the COVID-19 pandemic lockdown. To the best of our knowledge, this is the first narrative review to explicate the implementation and limitations of TC during the pandemic era. This understanding can contribute to strategizing for future healthcare planning and decision-making, enabling healthcare providers and policymakers to optimize the use of telemedicine.

METHODS

The data utilized in this research span the period of the COVID-19 pandemic. Other studies related to telephone consultation (TC) that occurred before the onset of the pandemic were gathered from a variety of reputable sources, such as PubMed, PubMed Central, Google Scholar, ResearchGate, and ScienceDirect. The inclusion criteria involved studies related to telephone consultation or telemedicine during the COVID-19 pandemic and its implementation and challenges. Studies reflecting face-to-face consultancy were excluded from consideration. The keywords used to investigate the literature were 'telephone or call consultations', 'video call consultation', 'primary consultations for COVID-19', 'perceptions of families regarding tele-consultations', and 'physicians and the challenges/limitations associated with phone consultations'. It is important to note that certain studies had stringent access restrictions, which posed limitations on their availability for this analysis.

RESULTS AND DISCUSSION

Implementation

Maintenance of data

Data maintenance in TC in primary healthcare is crucial for ensuring the integrity, security, and accessibility of patient information.[15] The guidelines from health insurance portability and accountability act (HIPAA) in the US provided should ensure high-quality care delivery and maintain patient privacy and confidentiality during teleconsultation.[16]

In a study conducted in Oman, the teleconsultation (TC) service was initially established as a crucial response by the primary healthcare (PHC) department. To assist physicians in conducting and documenting these consultations, the PHC department developed a comprehensive guideline to collect data encompassing non-communicable diseases (NCDs), antenatal care (ANC), and nutrition on excel sheets. However, the data-securing format was not reported.[17]

In another cross-sectional survey conducted in Qatar, a well-established system for managing patient records was revealed, which had been in place for several years. Notably, this electronic record system had been created with the purpose of efficiently and securely storing and managing extensive amounts of information, facilitating a direct link between primary care physicians and hospital records, and streamlining the transition to TC in the early phases of the pandemic. This system was provided by primary healthcare clinics. About 59.9% of the respondents expressed ease of patient identification over the phone through these electronic records.[18]

In a study from California, the collection of data implied interviewing patients and subsequently securing the data in the form of soft copies such as Excel sheets. However, concerns were raised about patient groups who may face challenges in navigating or lacking the necessary technology for participating in telemedicine visits. Their data cannot be secured on soft copies or by any other computer system. Storing patient data in physical copies or using non-secure methods increases the likelihood of unauthorized access or loss of sensitive information. Therefore, these patients were at higher risk for data breaches.[19]

Within Europe, patient data were secured via electronic health records (EHRs) of hospitals by adhering to the regulations of the European Union and the general data protection regulation (GDPR). However, there was a lack of consensus regarding the language to be used for documenting patient information in medical records. This lack of consensus may result in difficulty in data sharing, reduce the reliability of data, and increase the challenges in data analysis.[20]

Variability in roles and responsibilities

The adaptation of shifting healthcare professionals and supportive personnel's workflow towards a new telemonitoring care pathway involves a transition from traditional to digitally enhanced clinical practice. This change demands gaining experience, dedicating time to learning, and following relevant guidelines.[21]

A research conducted in Oman revealed that physicians functioned as part of a multidisciplinary team, comprising

nurses, clerks, medical orderlies, pharmacists, lab technicians, dieticians, and health educators. Despite belonging to the same job category, physicians stated variances in roles and duties amongst staff members. Nurses, for instance, were responsible for monitoring patients' vaccination, antenatal care, and follow-up for low-risk COVID-19 patients, as well as coordinating antenatal visits and scans on the same day. Occasionally, nurses were also involved in communicating plans to patients, however, they were not engaged in telephone consultations. In such cases, a hotline handled these general calls, which were primarily addressed by dieticians or health educators. Additionally, one dietician as a part of the hotline team offered general dietary advice for chronic ailments and also contributed to the COVID-19 team for follow-up care of patients and contacts.[23]

Another study conducted in Chile reported the integration of different roles in healthcare teams. These roles involve self-management and case management for nurses, medication review by clinical pharmacists, multimorbidity approach for high-risk or emergency patients by general practitioners, and a patient-centered care approach for all primary healthcare clinical staff other than doctors, surgeon or general physicians, all of which required additional training to ensure optimal performance during TC. This approach can help medical staff to record the data properly and avoid misdiagnosis and any other errors during teleconsultation.[22]

Between 2012 and 2015, a pilot trial was initiated, funded, and assessed for Slovenia's Health Insurance Institute. It involved the extension of the telemedicine service to all beneficiaries of public health insurance in Slovenia. The findings highlighted significant benefits of including clinical pharmacists and general physicians in primary care settings for medication reviews. This model facilitated collaborative learning and enhanced cooperation among various professional groups, including allied health professionals such as physiotherapists and pharmacists, while potentially reducing the need for referrals to specialists.[23]

Virtual consultation (VC) could serve as a platform for general practitioners in their further training roles during the pandemic era. This can open up opportunities for collaborative clinics and educational experiences, wherein VC can be utilized as informative events for various medical personnel to gain insights into different specialties, such as dermatology and heart failure. By incorporating this approach as part of educational programs, all healthcare professionals can acquire knowledge about various roles and specialties within the medical field. This approach can effectively alleviate the burden of TC on general physicians or other staff members, thereby distributing the workload more evenly. In Canada, VC systems were not well established. A number of highlighted factors include uncertainties over licensing requirements, digital infrastructure limitations, high costing for patients, low digital health literacy, and accessibility.[24]

Provided equal opportunities

Digital health should never contribute to disparities or bias. A comprehensive analysis has revealed that the provision of a spontaneous, easily reachable, and inclusive application that inevitably gathers dimensions could serve as an active and user-friendly key to mitigate differences and discrimination between rich and poor and provide equal opportunities for all patients.[25] In the Netherlands, the likelihood of patients lacking the essential technological resources for telemonitoring is minimal. It implies that a majority of patients, if not all, have access to the required technology for participating in telemonitoring activities. This situation can be seen as indicative of equal opportunities for all patients, regardless of whether they are affected by a condition or not.[26,27]

A recent evaluation has emphasized the potential of VC as a cost-effective solution for individuals residing in rural regions, as acknowledged by several general practitioners. Earlier, there existed significant and preventable disparities that particularly affected marginalized groups, such as individuals of Black, Asian, and other ethnic backgrounds, as well as older populations, who faced elevated risks of contracting COVID-19 and experiencing adverse effects. Regrettably, these individuals often encountered obstacles in receiving appropriate medical assistance due to issues related to their ethnicity. However, the advent of telecommunication technologies has emerged as a valuable solution, allowing these vulnerable populations to access medical treatment and support through phone or video consultations, free from the constraints imposed by ethnicity-related biases.[28]

In contrast, another study substantiated age-related accessibility concerns. Research findings indicate that younger individuals tend to utilize telephone consultations more frequently due to factors such as easy access, convenience, and capability. On the other hand, older individuals may perceive such consultations as an imposition due to limited mobility and the restricted availability of general practitioners for home visits. Grown-up patients were more likely to benefit from face-to-face consultations. Disparities in age patterns may also reflect urban and rural differences, as urban areas generally have a younger and more technologically literate population.[29] However, staff perspectives expounded that equal services are provided to individuals during teleconsultation that belongs to various demographic backgrounds, including gender, age, work experience, and education level.[30] As healthcare staff are the primary caregivers, and the provision of unbiased care is their primary responsibility, therefore the difference in the second observation may indicate flawed or unreliable information.

Standard of care

After the emergence of the COVID-19 pandemic, there has been an increased focus on the quality and legal responsibilities associated with healthcare procedures.[31] Clinicians and policymakers have expressed concerns regarding the potential liabilities that arose during this healthcare crisis. Given the scarcity of healthcare resources and the activation of state-level crises, the protection of liability became paramount.[32]

A comprehensive study was undertaken to assess the impact of ICU telemedicine on enhancing access to standard critical care services. The findings demonstrated that the dedicated staff provided the patients with exceptional care, utilizing advanced critical care facilities and resources. The results also revealed that appropriately tailored ICU telemedicine programs have the potential to augment the number of cases handled and improve accessibility to top-notch critical care; there is a potential for enhancing the overall financial performance through improved annual direct contribution margins. However, implementing this solution can incur substantial costs, particularly with regard to services like high-level critical care facilities. These facilities require expensive software for efficient data management, as well as specialized instruments and machines in the intensive care unit. Additionally, fast and reliable internet connections are essential.[33]

In a separate study conducted in Faisalabad, Pakistan, a preliminary telemedicine service was implemented at a healthcare facility. To cater to patients with respiratory tract complaints, dedicated COVID-19 desks were established, equipped with specific landline numbers connecting to doctors specially trained in telemedicine services, thereby maintaining the standards of telephone consultations. These landline numbers operated round the clock, 24 hours a day, seven days a week to provide consultations on telephone or on the internet.[34]

From the viewpoint of patients and their caregivers, regarding the qualitative implementation of TC among primary care providers and the referral cardiology departments, the benefits included enhanced accessibility to specialized services, better care and support and thorough consultation. These benefits were particularly emphasized by the rural cohort, where general practitioners (GPs) typically oversee patients' long-term care, ensuring greater continuity and comprehensive support.[35]

Regarding TC services for cancer patients, 68% provided significant care to a patient guiding them properly about their medicines and their progress, comforted them to ease their stress regarding their disease, while 32% patients needed face-to-face consultation according to their situation. The results demonstrated a statistically significant correlation between TC and increased levels of comfort, confidence, provision of better care, and perceived better treatment outcomes.[36]

Privacy maintenance

Maintaining privacy during teleconsultation is crucial to ensure the confidentiality and security of sensitive information about patients' details.[37] Telemonitoring encompasses physicians, patients, device manufacturers, and healthcare institutions. Ethical considerations necessitate the careful acknowledgment of the distinct roles and responsibilities held by these parties.[38] The data are maintained in a form of a soft copy, any drive or according to the guidelines provided by the hospital management and implementation of these guidelines should be ensured to safeguard patient privacy.[39-42]

In the Netherlands, a telemonitoring care pathway called the COVID box, specifically designed for COVID-19 patients was introduced. The data collected during telemonitoring were of a clinical nature, and the patient's personal health information was seamlessly integrated into their electronic medical records to facilitate direct medical treatment. Access to this information was granted exclusively to individuals directly involved in the patient's care, and they were bound by professional confidentiality. Furthermore, the data collected from patients adhered to both national and international regulations governing healthcare.[43] In Iran and Egypt, data security approaches were similar, with mixed success in ensuring patient confidence and accessibility. In order to prevent any data breeches, a secure storage hub (electronic health record) was established to store patient voice records and messages during remote healthcare delivery, but only 41%, and 68.2% of patients were confident regarding the sustainment of data confidentiality.[44,45]

Challenges

Insufficient technical and financial support

A significant number of medical professionals have expressed concerns about the inadequacy of available communication devices and the lack of financial support in this regard.[46,47] A study conducted in Oman revealed that a single phone was provided for multiple tasks, imposing an excessive burden on its usage. Typically, doctors and pharmacists share one mobile phone, which operates on a prepaid basis and often runs out of credit. Moreover, the phone is also used by other individuals.[23] In Uttarakhand's study, it was found that the limited time of connectivity, and unnecessary questions and answers could enhance the costs of telemedicine infrastructure. After each session, consultants provided essential feedback and advice, including prescriptions for locally available medications, through electronic messages sent to a central location. But connectivity issues or line disruptions have been shown to hinder this communication.[48]

Table 1: Implementation and challenges in teleconsultation.

Studies	Implementation				Challenges				
	Maintenance of data	Variation in roles and responsibilities	Provided equal opportunities	Standard of care	Privacy maintenance	Insufficient technical and financial support	Limited staff training	Misdiagnosis	Privacy and confidentiality communication
Al Hasani et al 2020[16]	✓	✓	-	-	-	✓	✓	-	-
Neshnan et al 2022[17]	✓	-	-	-	-	-	-	-	-
Gomez et al 2021[18]	✓	-	-	-	-	-	-	-	-
Gioia and Salducci 2019[19]	✓	-	-	-	-	-	-	-	-
Domenguez-Cancino et al 2020[21]	-	✓	-	-	-	-	-	-	-
Stuhec 2021[22]	-	✓	-	-	-	-	✓	-	-
Patterson et al 2022[23]	-	✓	-	-	-	-	-	-	-
Price and Simpson 2022[24]	-	-	✓	-	-	-	-	-	-
Mold et al 2021[27]	-	-	✓	-	-	-	-	-	-
Miyawaki et al 2021[28]	-	-	✓	-	-	-	-	-	-
Erfannia et al 2020[29]	-	-	✓	-	-	-	-	-	-
Becker et al 2020[31]	-	-	-	✓	-	-	-	-	-
Nagra et al 2021[32]	-	-	-	✓	-	-	-	-	-
Maria et al 2022[33]	-	-	-	✓	-	-	-	-	-
Kjeldsted et al 2021[34]	-	-	-	✓	-	-	-	-	-
Silven et al 2020[35]	-	-	-	-	✓	-	-	-	-
Jannati et al 2021[42]	-	-	-	-	✓	-	-	-	-
Alborae et al 2021[43]	-	-	-	-	✓	-	-	-	-
Kludacz-Alessandri et al 2021[44]	-	-	-	-	✓	-	-	-	-
Suresh and Nath 2013[46]	-	-	-	-	-	✓	-	-	-
Olwill et al 2021[47]	-	-	-	-	-	✓	-	✓	-
Murphy et al 2021[48]	-	-	-	-	-	✓	-	-	-
Song et al 2021[50]	-	-	-	-	-	-	✓	-	-
Breton et al 2021[51]	-	-	-	-	-	-	✓	-	-
Wolthers and Wolthers 2020[52]	-	-	-	-	-	-	-	✓	-
Westley et al 2022[53]	-	-	-	-	-	-	-	✓	-
Isogaya et al 2022[54]	-	-	-	-	-	-	-	✓	-
Isasi et al 2021[55]	-	-	-	-	-	-	-	-	✓
Avila et al 2023[57]	-	-	-	-	-	-	-	-	✓
Duis et al 2019[58]	-	-	-	-	-	-	-	-	✓
Sharma et al 2020[59]	-	-	-	-	-	-	-	-	✓

In a similar vein, Irish psychiatrists accentuated that 71% of individuals encountered technical difficulties such as poor internet connections, network issues in phone calls, and deprived telephone lines during teleconsultations.[49]

Similarly, in the UK, physicians frequently encountered technical problems like poor internet connections, network issues in phone calls, and deprived telephone lines during phone consultations during their consultations. Based on the patient's perspectives, this may eventuate misdiagnoses, and the misinterpretation of symptoms.[50]

Limited staff training

Recent guidance from the National Health Service (NHS) England emphasizes the necessity of supporting the training of general physicians to expand and diversify the range of digital solutions to address current healthcare requirements.[51] In Oman, all medical practitioners stated that TC were exclusively conducted by family physicians or experienced general practitioners. According to their accounts, senior doctors usually held mobile phones and attended to incoming calls in a suitable manner. While some doctors lacked the necessary skills, others possessed these skills but required opportunities to utilize them. Junior doctors still needed to consult with their senior counterparts.[23] Another study reported that general practitioners referred patients to clinical pharmacists for medication reviews in primary care settings. Initially, some pharmacists and general practitioners were hesitant to accept clinical pharmacists as integral members of the primary care team. The program also faced challenges regarding the availability of clinical pharmacists, as their existing commitments in hospitals and community pharmacies reduced their capacity to take on additional work in primary care settings.[31]

Concerning the viability of the rheumatology service, the COVID-19 outbreak presented a new challenge to the rheumatology community, which was already strained due to a shortage of trained staff amidst increasing demands. Furthermore, the lack of adequate personnel due to illness and redeployment posed a significant obstacle in meeting the unprecedented current demand. In addition, inadequacy of trained personnel for phone consultations exacerbated the situation.[52] A research study examined the effects of telehealth in primary healthcare settings during the COVID-19 pandemic, focusing on Quebec in Canada. In Quebec, when patients scheduled appointments through TC, some nurses who had been reassigned to hospital settings due to the pandemic were replaced by administrative assistants for triage duties. Unfortunately, these assistants lacked the necessary training in TC, which led to certain physicians having to fulfill this role themselves.[53]

Diagnostic issues

Several studies have highlighted the occurrence of misdiagnosis in telephone consultations. During the early days of the COVID-19 pandemic lockdown, a study was conducted to evaluate the occurrence of teleconsultations and the opinions of families visiting a pediatric outpatient clinic. While families expressed satisfaction with substitute telephone consultations, approximately 20% of them felt that telephone consultations were not the optimal choice as misdiagnosis rates may be increased due to poor internet or telephone line issues. Conditions such as asthma and allergic rhino-conjunctivitis often require objective measurement procedures like spirometry and laboratory tests, which obviously cannot be conducted over the phone. Families felt that these objective evaluations were inadequate, and many parents expected pulmonary stethoscope to be necessary for monitoring children with asthma.[54] For traumatic hand injuries, TC aided as an alternative to in-person evaluations when it comes to assessing injury characteristics. In the case of identifying the total body surface area burned, physicians have shown remarkable accuracy through photographic evaluation alone, making it a reliable method. However, determining the precise depth of burns has posed a greater challenge in telemedicine interfaces. Regrettably, the accuracy in accurately assessing burn depth has been relatively low using this approach.[52]

Similarly, in response to the initial surge of the COVID-19 pandemic, a telemedicine system in the UK was adapted and utilized as a virtual clinic to effectively handle hand trauma cases. The outcomes indicated less emphasis on precise injury details, such as correctly identifying which tendons were affected, leading to reduced accuracy in virtual consultations.[55] Another study investigated the efficacy of TC for bipolar disorder (BPD) patients, aimed to identify specific challenges faced by patients. Approximately 37% of the concerns raised pertained to the accuracy of their initial diagnosis, particularly regarding their complaints of depression and subsequently prescribed antidepressants when, in fact, they were suffering from BPD. Other individuals reported unexpected changes in their diagnosis when transitioning between hospitals based on the psychiatrist's specialization.[56]

Privacy and confidentiality of data

The majority of individuals voiced apprehensions regarding the privacy and safeguarding of sensitive patient data during teleconsultations.[57] Isasi et al reported that obtaining the correct phone number from the patient's file can be challenging, making it difficult to ensure that the intended recipient is indeed the patient or a trusted relative.[58] Other barriers involved the utilization of home consultation systems as the participants expressed concerns about the privacy breaches, particularly those who had not disclosed their ailment to their family. They were apprehensive that during online consultations, their family members might inadvertently overhear sensitive information.[59]

Among the children with Prader–Willi syndrome (PWS), TC successfully provided a 6-week play-based intervention to eight children aged 6 to 12 years with minimal behavioral or technological challenges. However, technical issues encountered during the intervention raised concerns about data privacy breaches by exploiting vulnerabilities in systems, networks, or software, allowing unauthorized access, data loss, or corruption.[60]

Similarly, a research investigation was conducted to examine the substance, caliber, and patient perception of video consultations (VC), telephone consultations (TC), and face-to-face consultations (FTFC) within the context of general practice. The results favored TC but highlighted some problems. Patients reported encountering technical difficulties during TC, obstacles in exchanging information and maintaining data privacy between patients and physicians like weak security controls, software bugs, and misconfigurations that can be abused by attackers to gain unauthorized access to patient's data.[52,61]

Lessons learned

The majority of the feedback received from participants came from alternative forms of consultation, with less than 20% consisting of traditional in-person appointments. Out of these alternative consultations, over 80% resulted in positive outcomes. All participants acknowledged the benefits of condensed overcrowding in primary healthcare facilities through the use of TC.[62] In Oman, approximately 10 out of 80 TCs were conducted for laboratory investigations, and occasionally, about 8 out of 40 were used to schedule visits for recently diagnosed patients. On a few occasions, patients sought additional assessment, experienced instability, faced language barriers, or required identity verification. Overall, TC proved to be sufficient and beneficial, particularly in the current circumstances, as it eliminated the need for patients, especially those at high risk, to physically visit healthcare centers.[23]

The health center will become more organized and less congested," stated all physicians, who expressed their gratitude for managing patients via TC to reduce the risk of infection, especially for the high-risk group. The study conducted in Oman demonstrated that telephone consultations greatly assisted individuals with chronic disorders, as those with comorbidities are more susceptible to complications from COVID-19.[23] Keeping them at home significantly minimizing the likelihood of virus transmission at the healthcare facility, particularly among individuals with diabetes and asthma, was prioritized.[63] Doctors expressed confidence in utilizing telemedicine for uncomplicated long-term conditions and individuals who are particularly vulnerable to COVID-19, and prescription refills. The higher utilization of telephone consultations by younger individuals suggests that it is easily accessible, convenient, and effective, while older individuals may face challenges due to limited mobility and limited availability of general practitioners for in-person visits.[64]

Studies worldwide have also confirmed that telemedicine services not only deliver prompt healthcare supply but also prove to be cost-effective.[65] All healthcare workers participating in the study reported an increase in knowledge and a change in behavior after undergoing the modular online training program for remote consulting in primary healthcare (REaCH). For many trainees, this was their first exposure to remote consultations.[66] The objective of the research was to evaluate the viability and reception of the REaCH training initiative among healthcare professionals in rural Tanzania, with the goal of improving healthcare services during the pandemic. Physicians discussed how the modules emphasized the practice of remote consultations instead of relying solely on face-to-face consultations, which had been the norm. Trainees reported conducting pre-clinical patient interviews and follow-ups via phone, rather than in-person visits.[67] Remote consultations were especially valuable for individuals who were reluctant to participate in in-person appointments out of concern for being stigmatized during pandemics.[68] Trainees also acquired knowledge on how to appropriately bill for remote consultations. Consultants even mentioned that they could potentially earn more income using this telephone consultation method.[69]

Future implementation

The implementation of teleconsultation involves facilitating technology sharing through measures like offering internet hotspots and equipping devices with telemedicine platforms. By implementing these technologies in homes, access to essential services can be enhanced. Satellite clinics connecting families with distant healthcare providers and designating telemedicine service sites in under-resourced neighborhoods can overcome technology barriers. Introducing a specialized mobile application for trauma patients can greatly enhance communication and interaction with physicians.

Limitations

The study encountered a few constraints that need consideration. Firstly, the strict accessibility measures resulted in the unavailability of up-to-date data, compelling us to rely solely on information spanning the previous ten years.

CONCLUSION

Given the unprecedented circumstances brought about by the COVID-19 pandemic, emerging evidence suggests that the utilization of teleconsultation (TC) as a viable substitute for in-person consultations in general practice, particularly for chronic cases, holds great promise. Nevertheless, certain challenges accompany the implementation of TC, including inadequately trained staff, technical issues such as connectivity problems, as well as the potential for misdiagnosis. However, in order to create a top-notch and maintainable TC service in primary healthcare, the establishment of an appropriate

structural framework is imperative. Key elements encompass comprehensive training of healthcare personnel, efficient data management, equitable access, and adherence to standardized care protocols.

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