

REVIEW

Patient satisfaction with telemedicine in acute care setting: a systematic review

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Article information:

Received: July 31, 2022

Revised: October 15, 2022

Accepted: October 15, 2022

ABSTRACT

Background: Telemedicine has revolutionized healthcare services with its unprecedented abilities to connect patients with healthcare professional across the distances. Patient satisfaction is an important measure of the quality and effectiveness of healthcare services.

Aim: The goal of this systematic review is to investigate patient satisfaction with telemedicine in acute care setting.

Methods and results: Four sources of data were searched: PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Scopus, and Web of Science. We used the Preferred Reporting Items for Systematic Reviews and Meta Analysis (PRISMA) as our basis of organization. Our analysis has showed that acute telemedicine was effective in managing a broad spectrum of acute medical conditions while achieving high levels of patient satisfaction.

Conclusion: Patient satisfaction is a complex product of expectations and experiences. Furthermore, it is an important indicator of the quality of the service. Despite the challenging nature of acute medicine, telemedicine services were successful in improving the quality of the service and achieving high levels of patient satisfaction.

Relevance for patients: Telemedicine is rapidly evolving as an essential component of our healthcare system. Implementing telemedicine in acute care is a relatively new concept and patient satisfaction in these settings needs to be evaluated.

Keywords: Telemedicine, Patient satisfaction, Acute care, Hospital at home

1. INTRODUCTION

Telemedicine is defined as the use of communication technology to provide patients with medical information and services[1]. Telemedicine has emerged during the last two decades as a potential solution for many problems facing health care systems around the world. Besides its inherent abilities in connecting patients to healthcare providers across distances, it has proven its efficacy in reducing costs of medical services, in-hospital admission and readmission rates while improving outcomes and patient satisfaction[2-4].

Despite the challenging complexity and ambiguity, patient satisfaction is an indispensable measure of the quality of any healthcare service, including telemedicine services[5]. This importance arises from the fact that satisfied patients are both more likely to comply with their treatment plans as well as cooperate with their healthcare providers[6]. Additionally, satisfaction with a particular service increases chances of reuse of that service in the future, as well as recommending that service to others[7]. Finally, satisfaction with a service is a reflection of its quality. The healthcare service has several quality attributes such as, art of care, technical competency, accessibility, finances, physical environment, provider availability, continuity of care, and efficacy. Although it is essential to continuously assess and revise each of these attributes objectively, evaluation of patient satisfaction can give a holistic view of the quality of the system.

Since its introduction, telemedicine has been mostly utilized to serve patients with chronic medical conditions. However, the last few years have witnessed more utilization of telemedicine in acute medical care to solve some of the most complex challenges in this field such as emergency department (ED) overcrowding, the lack of healthcare access in remote or underserved areas, and the high expenses of inpatient care.

ED offers various clinical services to a broad spectrum of clinical conditions from benign to life threatening making it liable to overcrowding. Emergency department overcrowding is defined by the American College of Emergency Physicians as a condition where the need for emergency services exceeds available resources for patient care in emergency department and mainly results from ED

boarding[8]. ED boarding is the practice of holding patients in the ED after admission to the hospital until an inpatient bed is available[9].

ED boarding is a major cause of ED overcrowding and results mainly from lack of institutional capacity relative to the number of cases rather than under-staffing, flaws in ED design or poor performance of ancillary service as was previously believed[10]. ED overcrowding increases morbidity and mortality for both boarded and ED patients; it also increases the length of stay for admitted patients and decreases both patient and staff satisfaction[8,9].

The cost of inpatient care is high and accounts for a large percentage of total healthcare spending: US health care spending has increased to 3.8 trillion USD in 2019 and hospital care services accounts for about 31% of the total expenditure[11]. In general, the total expenditure on health care in the United States is expected to rise from 17.9 % of the country's gross domestic product (GDP) in 2017 to 19.7% by the end of 2028; an increase that is 1.1% faster than growth in GDP[12].

Although the utilization of telemedicine in out-patient settings has been associated with high levels of patient satisfaction[4], the fundamental difference between the acute and out-patient care mandates separate evaluation of patient satisfaction. Therefore, we conducted a systematic literature review to investigate the association between the utilization of telemedicine in the acute care setting and patient satisfaction.

2. METHODS

2.1 Information sources, search strategy, and eligibility criteria

We used four sources of data for our search: PubMed (2010-2021), Cumulative Index of Nursing and Allied Health Literature (CINAHL) (2010-2021), Scopus (2010-2021), and Web of Science (2010-2021). We used the Preferred Reporting Items for Systematic Reviews and Meta Analysis (PRISMA) as our basis of organization. The following Medical Subject Headings terms guided our search

strategy: ("telemedicine" OR "homecare services") AND ("patient satisfaction"). Search terms were adapted according to each database. Details on search terms used for every data base are provided in the supplementary material.

Eligibility criteria were (1) published between 2010-2021, (2) English language, (3) humans only, (4) full text available, and (5) covering telemedicine in acute care setting and at least one measure of patient satisfaction.

2.2 Study selection and data collection process

Each author independently performed the search and removed the duplicated using EndNote (Clarivate Analytics). After filtering the studies based on titles; abstracts were then screened according to the aforementioned eligibility criteria. The remaining studies were screened based on full text readings.

2.3 Data items and summary measures

We included all studies that covered both telemedicine in acute care and at least one measure of patient satisfaction such as communication, convenience, safety, privacy, likelihood to reuse the service, and likelihood to recommend the service to others. Studies that failed to cover both topics were excluded from the analysis.

2.4 Quality and risk of bias assessment

The quality and risk of bias of the included studies was assessed using the National Heart, Lung, and Blood institute (NHLBI) quality assessment tools. In 2013, NHLBI developed a group of quality assessment tools to assess studies' internal validity. The tools were designed to and tested to detect potential flaws in study methods or implementation. Two authors used the appropriate tool for each study according to the study design and provided the results for each study in the supplementary material.

3. RESULTS

3.1 Study selection, study characteristics, and results of individual studies

The initial search revealed 307 results, after title and abstract screening, 283 results were excluded. 24 papers underwent full text screening resulting in 12 papers being included in the final review (see **Figure 1**).

We have summarized the results of our analysis in three tables. Table 1 contains a summary of acute conditions treated, the technology used, the service provided through telemedicine, and a summary on patient satisfaction. Table 2 summarizes the type of questionnaire used for every study.

3.2 Synthesis of results

All the studies included in this review offered telemedicine services to acutely ill patients. A wide range of acute conditions were managed through telemedicine in the reviewed studies including: acute respiratory tract infections[25,26], skin and soft tissue infections[26], acute rheumatic fever[25], acute pediatric conditions[25], acute exacerbations of COPD and CHF[27-29], acute respiratory distress in patients with amyotrophic lateral sclerosis[30], surgical and traumatic wounds[31], medical emergencies in elderly[19], mental health emergencies in children[32], and post-surgical care[27].

The included studies reported providing telemedicine services in urban and rural[26,33] healthcare settings. One interesting study reported achieving telemedicine presence using a robot in a distant rural underserved area[33]. In addition, the included studies provided telemedicine services to pediatric [25,32], adult [26-30], and elder populations [19]. This diversity is important as it proves that telemedicine can be implemented in different healthcare settings and adopted by diverse patient populations.

The services provided through telemedicine included: remote consultation for diagnosis, management plan, decisions on referrals, admission to a hospital or discharge; and remote monitoring for follow-up.

The most frequently used modality of telemedicine was videoconference as it was used in eleven out of twelve studies [25-29] [19,31-35]. In ten studies, videoconference was used to connect patients with healthcare providers and in one study it was used to connect paramedics to emergency physicians[35]. Only one study used telephone calls instead of videoconference[30]. In that study, patients with amyotrophic lateral sclerosis used phone calls to report symptoms of acute respiratory distress to healthcare professionals and based on the call medical assistance was offered to the patients at their homes (see Figure 2).

The fact that videoconferencing is the most frequently utilized modality in the included studies is not surprising. Videoconferencing is very convenient in terms of being an effective alternative to the traditional face- to- face appointments. This advantage becomes particularly useful in delivering healthcare to distant communities or when social distancing is preferred as we have witnessed during the SARS-CoV-2 pandemic[36].

Telemedicine visits took place in patients' homes in seven studies. In the other five studies, a neighborhood service center[25], a clinic[34], a hospital[32], a senior living facility[19] and a rural clinic run by nurses[33] hosted the service.

Patients were offered in-person visits or other in-person medical services in six studies [27-31,35]. These services include home visits by healthcare professionals, laboratory testing, imaging studies, oxygen therapy, intravenous (IV) fluids and wound dressing [27-31,35].

Eleven out of twelve studies reported evaluation of patient satisfaction using questionnaires[19,25-30,32-35], one study did not report the modality used for evaluation[31] (see Table 2). Out of the eleven studies, nine studies used self-completed surveys for evaluation, while two studies used interview questionnaires[30]. Seven studies out of twelve evaluated provider satisfaction(10, 11, 14-17, 19), six studies reported using questionnaires while one study did not report the modality used[31].

Most studies reviewed used telephones, mobile phones, computers and tablets to connect patients to care providers. One study used a home monitoring station to allow virtual visits as well as wireless devices for biometric measures as blood pressure and oxygen saturation[29]. Another study described

the use of portable telemedicine units which included peripheral devices, connected to a laptop computer that enabled acquisition of high-resolution images of tympanic membranes, eyes, throat, or skin as well as audio files of lung sounds[25]. An electronic stethoscope, a digital otoscope, a high resolution camera and a web camera were also used to obtain patients' vitals and other diagnostic information and send them to care providers[19]. An interesting study reported the use of a robot to achieve tele-presence in a rural community; the robot was successfully used for diagnosing and monitoring the patients (see Figure 3).

Technology and communication were the most frequently evaluated attributes in the included studies. In general, technology and communication were very well-received by patients and care providers (>90% in all studies). The good impression among patients including elderly [19] holds high promises of more implementation of technology in acute care.

Most patients said they would reuse and/or recommend the service. One study asked parents/caregivers of children who received telemedicine service if they would consider telemedicine for their own care and the responses were highly positive (78% agreed)[25]. Caregivers and family members also expressed their satisfaction with telemedicine as it reduced travel time and days missed from work[29].

Convenience is a major determinant of quality from the patient's perspective. Convenience was tested in two studies and generally received an excellent feedback (94.5%, 95%)[25,34]. In one study, convenience was the most important factor in deciding to use telemedicine (85% of patients said it was very important while only 0.8% said it was not at all important)[25]. In the same study, satisfaction with convenience was a strong predictor of being satisfied with telemedicine as those who were satisfied with convenience had more than 2.3 times the odds of liking telehealth[25].

Although privacy, safety and staff training were less frequently evaluated, they received positive feedback in general (>90% in both studies)[26,29]. Telemedicine was also effective in reducing cost, unnecessary travel, missed days from work or school and delays to next appointment [29,32]. Overall

satisfaction was the sole measure of patient satisfaction in two studies[31,35] and was tested among other aspects in most of the studies. The overall satisfaction was high in all except one study[35].

3.3 Quality and risk of bias assessment

The quality and risk of bias assessment is provided in details in the supplementary material. In general, three studies were of poor quality, five studies were of fair quality, and the rest of the studies were of good quality.

Potential sources of bias included: restriction to a certain area (geographically limited) [25,26,28], limited generalizability[35], age bias [27], gender bias[19,26,28] ,non-randomization[27], small sample size[28] and interviewer bias[19,30].

4. DISCUSSION

Satisfaction with a healthcare service- and probably any service- is a combination of expectations and actual experiences[37]. In other words, to achieve consumer's satisfaction, the service offered to a patient should meet his expectations.

Expectations are beliefs, created and sustained by a cognitive process; these expectations, however, determine satisfaction which is an affective state[38]. Patients' expectations can be divided into four distinct types: ideal, predicted, normative and unformed. Ideal expectations, as the name implies, refer to an idealistic state of beliefs; in other words, the patient's imagination of how a perfect service should look like[38,39]. Predicted expectations are simply what the patient is expecting to happen in the real world, and it is based on a source of knowledge which can be the patient's own previous experiences, a family member or a friend experience or even the media[38]. Normative expectations are situational, they imply what the patient think should happen while receiving the service. Finally, unformed expectations refer to a state of inability to form any thoughts about the healthcare service to be received; patients could be too afraid or anxious to formulate an expectation. In this state, patients would perceive any service as accepted regardless of quality [39]. These expectations are not constant,

they evolve and interact with each other as the patient's experience goes on which make them very difficult to predict.

While it seems impossible to predict or control patients' expectations, it looks more plausible to identify the attributes of those expectations. In theory, if we identify the attributes that form patients' expectation, we could fulfill these attributes to achieve the highest satisfaction with the service.

Mahon[40] was one of the first researchers to try to identify these attributes. She reported eight attributes: the art of care, technical quality of care, accessibility, finances, physical/organizational environment, availability of providers and resources, continuity of care and efficacy. Janet et al.[5] identified provider attitude, technical competence, accessibility, and efficacy as the major attributes of patient satisfaction.

Based on the aforementioned factors, to achieve high levels of satisfaction, the proposed healthcare service should be: humane, technically competent, easily accessible and affordable. It should provide patients with best possible outcomes, guarantee continuity of care, facilitate delivering service to their homes with minimal bureaucracy or organizational complications[41]. Telemedicine has the potential to improve most of these aspects and thus, provide patients with better overall experience and higher levels of satisfaction than the usual hospital setting[5].

Designing a valid questionnaire is not easy; even the simplest surveys require trained personnel, generous resources and ample time[6]. This fact is reflected in the included studies where most of the included studies utilized non-validated tools to assess their outcome which is a major drawback (see Table 2). Self-completed surveys and interview surveys are the most commonly used surveys in healthcare sector, and they were the most commonly utilized in this review (see Table 2). Self-completed surveys are generally preferred as they guarantee standardization of items among patients[6]. They are also less liable to interviewer bias and could be conducted at a significantly lower cost[6]. Despite this fact, two of the included studies depended on interview questionnaires to evaluate patient satisfaction[19,30]. In general, a well designed survey should evaluate as many patient satisfaction attributes as possible, and provide the decision maker with information that are easy to interpret and build actions upon[42].

Telemedicine is more frequently implemented in care of patients with chronic medical conditions, usually for the purpose of remote monitoring and follow up. In these settings, telemedicine is frequently integrated with home care services to provide chronic patients with hospital care level at home. These models have shown great success in managing complex clinical scenarios as heart failure and debilitating neurological diseases while lowering cost and hospitalization rates[2,3]. These programs are usually well-received by patients and achieve high levels of patient satisfaction[4]. However, using tele-medicine in delivering acute care is fundamentally different and patient satisfaction in such settings should be approached differently and distinguished from patient satisfaction in the setting of chronic disease.

Telemedicine has the potential to be the next breakthrough in acute medicine as it extends the boundaries of the practice across distances. In our analysis, telemedicine was effectively used to manage a broad spectrum of acute medical conditions from pharyngitis to acute exacerbations of COPD and psychiatric emergencies (see figure 4). Telemedicine reduced the cost of medical service (13, 14), readmissions, ED visits [29], unnecessary travel[29], missed days from work and school[32] and unnecessary referral and hospitalization. Telemedicine provided patients with acute care at homes, senior living facilities [26], rural community clinics[33] and geographically isolated areas[26]. It has improved outcomes, communication with the medical staff and the quality of service.

The studies included used different modalities to evaluate patient satisfaction. Most studies used self completed questionnaires (See Table 2) which are superior to interview questionnaires that were used in two studies. Technology, communication, likelihood to recommend/reuse and overall satisfaction were the most frequently evaluated attributes of telemedicine. Most patients embraced telemedicine services and reported high levels of satisfaction.

Provider satisfaction was also evaluated in seven studies and similar attributes were measured. Physicians, nurses, paramedics and technicians reported high levels of satisfaction with telemedicine. Most of the providers expressed their willingness to re-participate in a telemedicine service. However, some concerns about the inability to physically examine the patient were reported [26]. Additionally,

some technical issues like the quality of the images or the weight of the equipments were reported[19].

Despite these concerns, the general trend among the vast majority of providers was very positive.

Despite the promising results of telemedicine in acute care, it still faces significant challenges. One major obstacle is the resistance to change by both providers and patients. This is particularly true for older patients and providers who might face difficulties using modern technology [43,44]. Cost and reimbursement seem to be another challenge to implementing telemedicine. For example, in the United States, Medicare does not reimburse very much in the fee-for-service system, and reimbursement is limited to nonmetropolitan areas, and to certain current procedural terminology codes. Many of these restrictions result from fears that telemedicine either will allow providers to abuse the health care system or will lead to overutilization and drive up costs[45]. Furthermore, the level of patient education could be problematic, particularly in the developing world as handling technology requires a minimum level of literacy. Moreover, regulations and legalizations might be a significant challenge in some instances. For example, in the United States, some medical boards require an in-person consultation before initiating any telemedicine service[45]. Finally, the lack of evidence on many of telemedicine interventions might delay the implementation of these interventions on a large scale.

We believe this review provides a contribution to the growing evidence on the effectiveness and efficiency of telemedicine. It proves that acute medicine can substantially benefit from the technological advance while achieving high levels of patient satisfaction. To the best of our knowledge, this is the first systematic review to measure this association.

CONCLUSION

Telemedicine is more frequently used in managing patients with chronic medical conditions and was found to achieve high levels of patient satisfaction. This systematic review aims at evaluating patient satisfaction when telemedicine is implemented in the acute care.

Technology, communication, convenience, and safety received highly positive feedback from patients.

The overall satisfaction in most of the studies was excellent among patients.

Acknowledgements

Figures 2, 3 and 4 were generated using Biorender.com

Conflict of interest

The authors declare no conflict of interest

Epub ahead of print

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Tables and figures

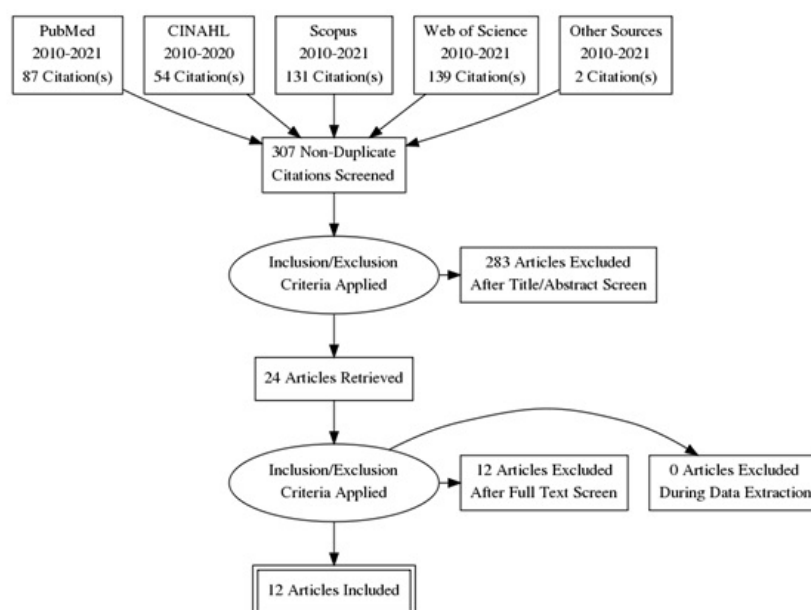


Figure 1. PRISMA flow chart.

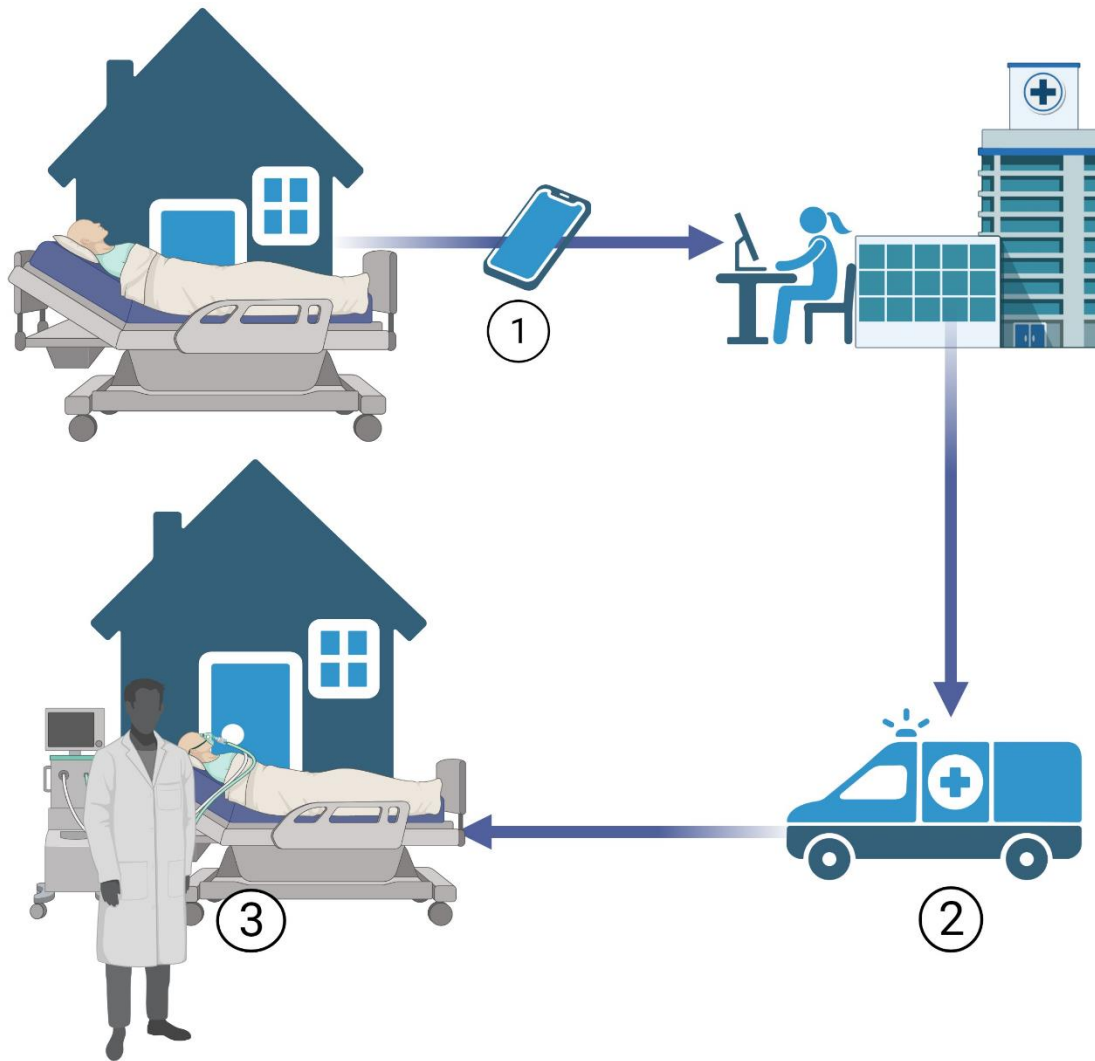


Figure 2. 1- Patients with amyotrophic lateral sclerosis suffering acute respiratory distress would request help through a phone call. 2- A specialized team heads to the patient home. 3- Respiratory assistance including assisted ventilation is provided at patient's home. Created with Biorender.com

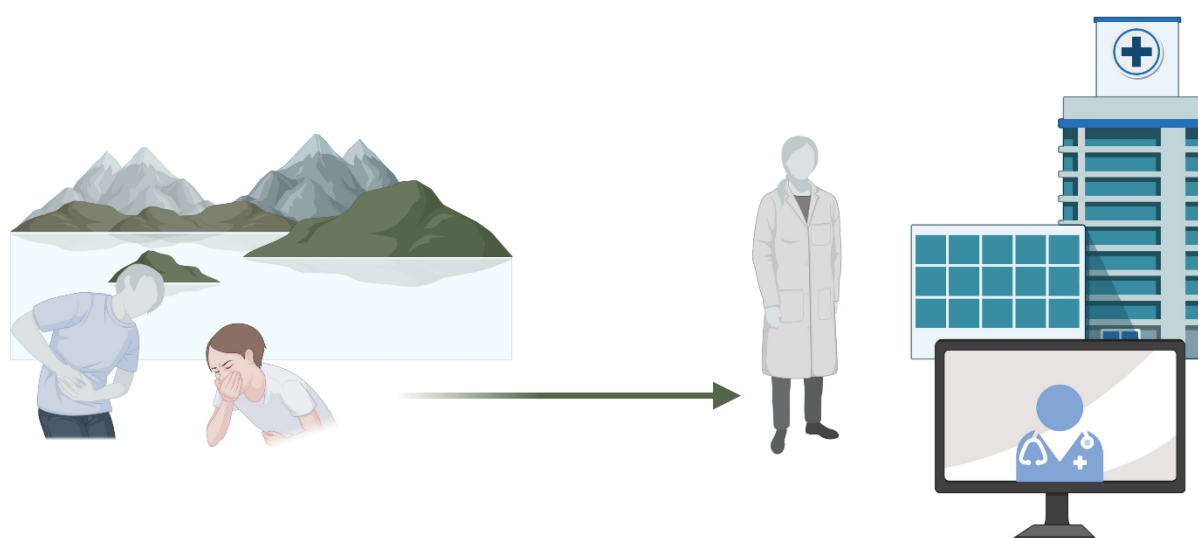


Figure 3. In one program, patients from a rural area received telemedicine services in a rural clinic run by nurses. The virtual visits were carried out through a robot. Created with Biorender.com

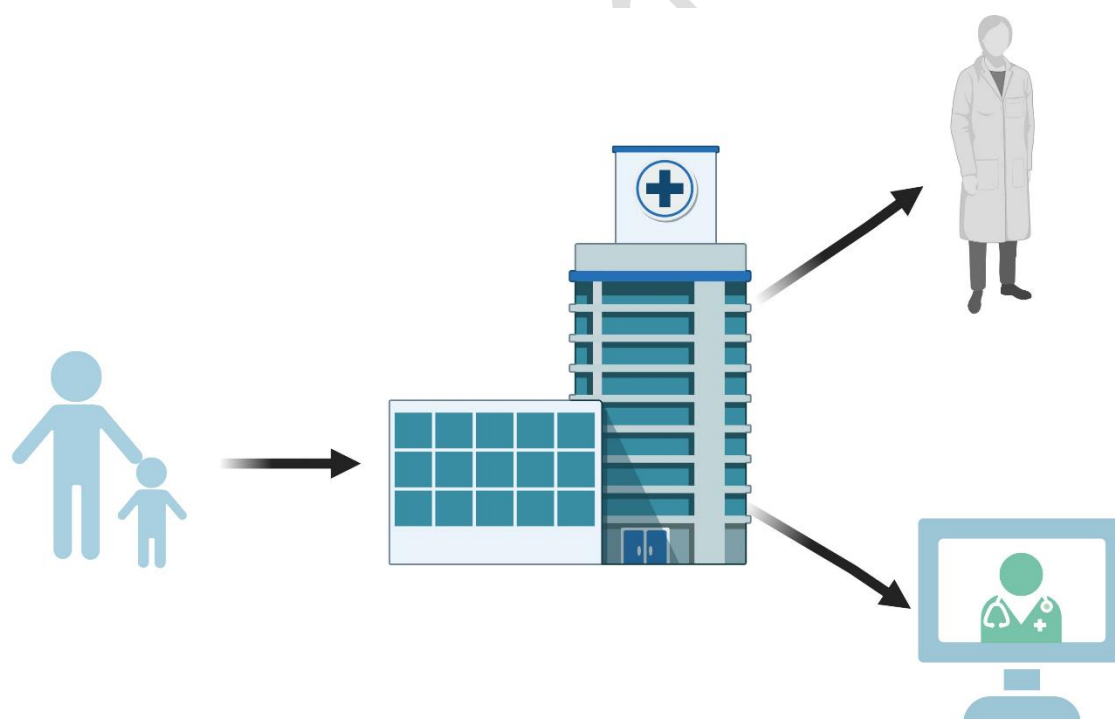


Figure 4. Pediatric patients with psychiatric emergencies presenting in the emergency department were offered either a regular face to face visit or a virtual visit. Created with Biorender.com

Table 1. Summary of the included studies.

Author, Date and Country	Acute conditions managed	Technology used	Service provided through telemedicine	Home care services provided	Summary
Hernandez et al.[13] May 2018 Spain	Acute illness, Exacerbation of chronic conditions, early discharge, post-surgical care.	Video conferences through a digital platform.	Remote monitoring, remote consultation.	Home-based care plan, including daily nurse visits, physician's visits and laboratory tests like ABG, blood analytics and forced spirometry.	High patient and provider satisfaction rates (98%) reported.
Jakobsen et al.[14] May 2015 Denmark	Acute exacerbation of COPD	Touch screen with a Webcam.	Remote monitoring and remote consultation.	Oxygen therapy, aerosolized medications, steroids, sedatives.	High satisfaction rates (100%) among patients and care providers
Mashru et al.[15] January 2017	Musculoskeletal infections, skin and soft tissue infections,	Video conferencing	Remote consultation.	N/A	High patient satisfaction (98% overall)

Canada	respiratory infections and acute rheumatic fever.				satisfaction) was reported.
McIntosh et al.[16] December 2014 USA	Acute pediatric conditions as otitis media, conjunctivitis, and upper respiratory tract infections.	Portable telemedicine units which include peripheral devices, connected to a laptop computer, that enable acquisition of high-resolution images, and lung sounds.	Remote consultation through videoconference visits and store-and-forward (asynchronous) visits.	N/A	<i>Almost all survey respondents were satisfied or highly satisfied with neighborhood visits (97.6%) and endorsed greater convenience than alternatives (94.5%).</i>
Mendez et al.[17] August 2013 Canada		RP-7 robot (In Touch Health Inc., Santa Barbara, CA, USA).	Remote consultation.	N/A	High degree of patient, nurse and physician satisfaction was reported.
Polinski et al.[18] August 2015 USA	Pharyngitis, sinusitis, otitis media, otitis externa, upper respiratory infections, bronchitis, allergic rhinitis, influenza	Video monitor with two-way audio and visual capabilities.	Remote consultation.	N/A	High degree of patient satisfaction was reported.
Shah et al.[19] April 2013	Cough, shortness of breath, musculoskeletal pain, face swelling, chest pain.	Electronic stethoscope, digital otoscope, high resolution camera and web camera linked to	Remote consultation.	N/A	High satisfaction

USA		laptop, scanner and printer.			among patients and providers.
Summerfelt et al.[20] October 2015 USA	Acute exacerbation of COPD or CHF, Asthma, DVT, Pneumonia	Centra station and home monitoring station to allow virtual visits. Wireless devices for biometric measures (eg., blood pressure)	Remote consultation and remote monitoring.	Home visits by nurses and physicians, diagnostic procedures like USS, and therapy including IV fluids and oxygen therapy.	High satisfaction rates among patients. There was statistically significant better satisfaction with staff, convenience for caregivers, and comfort, convenience, and safety than in control group.
Sykora et al.[21] September 2020 Czech Republic.	Not reported.	Audiovisual calls between paramedics and physicians to evaluate low urgency calls.	Remote consultation.	Treatment on site for eligible cases by paramedics.	Audiovisual consult improved the subjective feelings of safety by emergency physicians, but not of patients or paramedics

Teot et al.[22] December 2019 France	Surgical and traumatic wounds	Videoconference through a web platform.	Remote consultation.	Wound dressing and examination.	The overall satisfaction of the patient and caregiver was high.
Thomas et al.[23] October 2017 USA	Pediatric mental health emergencies.	Videoconference.	Remote consultation.	N/A	Providers and patient caregivers reported high satisfaction with overall acceptability, effectiveness, and efficiency of telepsychiatry.
Vitacca et al.[24] May 2010 Italy	Acute respiratory distress in patients with amyotrophic lateral sclerosis.	Telephone calls	Remote consultation.	Home visits for mechanical in-exsufflation, and manually assisted coughing.	All patients were satisfied and 75 % of patients were extremely satisfied with the service. 86% considered the intervention effective while 14% considered it somewhat effective.

Study	Type of survey conducted	Aspects of patient satisfaction evaluated	Comments
Hernandez et al.[13]	Self-completed questionnaire.	Treatment received, Likelihood to participate again.	Validated questionnaire. Qualitative data regarding the adoption of technology in the context of the service was assessed by the Method for Assessment of Telemedicine applications (MAST)
Jakobsen et al.[14]	Self-completed questionnaire.	Technology, communication, convenience of equipments.	Non-validated user-satisfaction questionnaire.
Mashru et al.[15]	Self-completed questionnaire.	Technology, communication, privacy, staff, likelihood to recommend service, likelihood to reuse the service, overall satisfaction.	Validated questionnaire.
McIntosh et al.[16]	Self-completed questionnaire (by the parent or guardian).	Convenience, overall satisfaction, likelihood to reuse the service for the child, likelihood to use telemedicine by caregiver.	Non-validated questionnaire. The questionnaire was developed from parent focus groups, from key informant interviews with parents, healthcare providers, and staff, and from an instrument previously used with school telemedicine service.
Mendez et al.[17]	Self-completed questionnaire.	Technology, communication, likelihood to reuse the service.	The study depended on a combination of non-validated questionnaire and qualitative interviews to evaluate the satisfaction.

Polinski et al.[18]	Self-completed questionnaire.	Technology, treatment, staff, communication, convenience, likelihood to reuse service, likelihood to recommend service, preference of tele-health compared to traditional visits.	Non-validated questionnaire.
Shah et al.[19]	Interview questionnaire.	Communication, perceived value, unmet expectations, diagnosis certainty, staff training, technical issues.	From the interviews, 196 discrete statements were identified. Thirty-one codes were developed and assigned to the various statements. These statements were then organized into eight themes and three overarching domains
Summerfelt et al.[20]	Self-completed questionnaire.	Patients: convenience, safety, staff, communication, overall satisfaction, likelihood to reuse service, likelihood to recommend service to others. Caregiver/family member: ease for family members, travel time, missed work.	Validated survey (Hospital Consumer Assessment of Healthcare Providers and Systems(HCAHPS) survey).
Sykora et al.[21]	Self-completed questionnaire.	Overall satisfaction	Non-validated questionnaire.
Teot et al.[22]	Not reported.	Overall satisfaction.	
Thomas et al.[23]	Self-completed questionnaire (by parent or guardian)	Technology, communication, comfort, likelihood to reuse service,	Validated questionnaire.

likelihood to recommend to others, reduced unnecessary travel, missed days from work/school, or delays for next available appointment.			
Vitacca et al.[24]	Interview questionnaire.	Overall satisfaction, efficacy.	Interviews were conducted over the telephone.

Table.2: Type of questionnaire and aspects of patient satisfaction evaluated for every study.