Systematic Review/Meta-analysis

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Use of telemedicine to tackle health problems in South Asia during the COVID-19 era and beyond: a systematic review

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Introduction: Telemedicine (TM) and teleconsultation services flourished during coronavirus disease 2019 (COVID-19) transmission to avoid COVID-19 infection and physical contact. Many physicians switched to the virtual treatment mode and nearly all types of health disciplines were covered. Through this systematic review, the authors tried to explore the strengths and weaknesses of TM, identify the barriers to adopting TM by population, and explain the limitations of this healthcare delivery model.
Methods and results: In this systematic review, 28 studies were included (> 53% high-quality studies) as eligible, where nearly 75% ($n = 21$) of the studies were from India, and the remaining 25% ($n = 7$) were from Pakistan, Bangladesh, Sri Lanka, and Nepal. Advice related to cancer, autoimmune diseases, and neurological diseases were the most common among the health disciplines in which TM was used. A peak in teleconsultation was observed during the high transmission phase of COVID-19, although major queries were associated with existing health complications and comorbidities.
Conclusion: Other than a few concerns regarding connectivity, privacy, and diagnosis, TM was in fact affordable, timesaving, feasible, and accurate, which ensured a highly satisfying experience among the participants (> 80%).

Keywords cancer, cardiovascular, diabetes, surgery, telecare, telehealth

Introduction

Telemedicine (TM) is a healthcare delivery model in which electronic communication and information technologies are used to provide remote medical care to improve patients' health status[1]. During the coronavirus disease 2019 (COVID-19) pandemic, the demand for TM increased drastically because of the need to avoid physical contact and outdoor movement. The queries asked through telehealth were not only about COVID-19 but also involved different sectors, including oncology, endocrinology, cardiology, geriatrics, orthopedics, neurology, and dermatology[2]. During the COVID-19 pandemic, this remote healthcare service worked as a blessing for acute and chronic disease management, such as diabetes, cancer, pregnancy, respiratory diseases, nutrition, and mental health issues. It was particularly helpful for rural residents, where better health services are hardly accessible and there is a lack of physicians[2,3]. A study in the USA depicted a remarkable increase in TM service demand, from 0.8 to 17.8 per 1000 people seeking TM facilities between January and June 2020. At the same time, there was a 9.1% decrease in inpatient visits[4]. Even during the COVID-19 pandemic, many physicians were unemployed in their official jobs or resigned from their fields of expertise to provide emergency COVID-19 care. The TM service at that time helped provide Tier 1 and Tier 2 medical care[5]. New and old TM users had comparable satisfaction levels. Previous users were more confident[6]. However, connectivity, technical operation, data

HIGHLIGHTS

- The present observation revealed that a peak in telemedicine use was observed during the high transmission phase of COVID-19, although the major queries were associated with existing health complications and comorbidities.

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privacy and confidentiality, lack of diagnostic tests, suspicion of physicians' qualifications and technical skills, the scope of serving special populations, and acceptability are concerns of TM that are yet to be overcome[7]. Particularly in developing countries in South Asia, such as Bangladesh and India, TM is not familiar to most people, is run by very few institutions, and lacks practice guidelines[8,9]. During the last week of March, 16.2% of queries were associated with COVID-19, compared with 5.5% in January[10,11]. The lack of physical visits during COVID has led to incompliance in patients with chronic diseases[12]. Children, adolescents, and pregnant women are usually more vulnerable and require emergency and special health problems, as well as physiological, mental, reproductive, and all other necessary healthcare support conveniently through TM[13,14]. Practitioners and policymakers believe that TM is gradually receiving more attention and acceptance but still needs improvement[15,16]. This review explored the strengths and weaknesses of TM as a healthcare delivery model. It also identifies barriers to adopting TM by population and explains its limitations and future implications.

Methods

Search strategy

The PRISMA guidelines were followed to design the methodology for this systematic review[17] and the PRISMA 2020 checklist was attached as a separate file (Supplemental Digital Content 1, http://links.lww.com/MS9/A345) and PRISMA flow diagram as Figure 1. Three databases were searched for relevant studies: PubMed, Google Scholar, and ScienceDirect. An advanced and Expert search strategy was used with the terms 'Telemedicine' OR 'Teleconsultation' OR 'Telehealth' AND 'COVID-19' AND 'Bangladesh' OR 'India' OR 'Pakistan' OR 'Sri Lanka' OR 'Nepal' OR 'Bhutan' OR 'Afghanistan' followed by 'Title and abstract' for PubMed and 'Title, abstract and keywords' for ScienceDirect. The 'allintitle' option was used on Google Scholar. Separate Boolean operators were used for each database (the search strategy is attached as Supplementary Material, Supplemental Digital Content 2, http://links.lww.com/MS9/A346).

Inclusion and exclusion criteria (Table 1)

Data extraction

The following information from each eligible study was noted in an MS Excel Spreadsheet: first author, year, country, sex ratio, medium of communication, advantages of TM, concerns of TM, satisfaction level, age, number of patients, timeline of studies, brief purpose and outcome, quality assessment score, and study type.

Quality assessment

Quality assessment of the eligible studies was performed based on the AMSTAR 2 (A MeaSurement Tool to Assess Systematic Reviews) checklist (AMSTAR 2 checklist attached as a separate file, Supplemental Digital Content 3, http://links.lww.com/MS9/A347). Any discrepancies were resolved through discussions between the authors. According to Joanna Briggs Institute's (JBI) critical appraisal tools of the Joanna Briggs Institute, if <50% of queries were satisfied from the checklist, those studies were considered low-quality studies; however, if 50–70% and > 70% of queries were satisfied, these studies were regarded as moderate-quality and high-quality studies, respectively[18–20].

Registry: The review was registered on PROSPERO with registration number PROSPERO 2023 CRD42023454835 available at: (https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42023454835.

Research Registry UIN: reviewregistry1739, available at: https://researchregistry.knack.com/research-registry#registryofsystematicreviewsmeta-analyses/registryofsystematicreviewsmeta-analysesdetails/655e0e87ec01ef0029c8a5f7/).

Results

Study selection

The study assessed a total of 357 studies, and the search process involved three search engines: PubMed ($n = 279$), ScienceDirect ($n = 45$), and Google Scholar ($n = 33$). Most studies were ineligible for inclusion because of their irrelevance and unsuitable study designs ($n = 289$). Ultimately, 68 studies were evaluated for eligibility, of which 26 were eliminated due to duplications across the databases. Subsequently, the full texts of the 42 studies were assessed. Upon evaluation, 14 studies were found to be unsuitable for the purpose of the study, either because of a lack of relevance or an unsuitable data format. Consequently, 28 articles met the inclusion criteria for this systematic review (Fig. 1).

Study location

Of the 28 eligible studies, almost three-fourths were conducted in India ($n = 21$), Pakistan ($n = 3$), Bangladesh ($n = 2$), Sri Lanka ($n = 1$), or Nepal ($n = 1$). Notably, no eligible studies were obtained from Bhutan or Afghanistan (Fig. 2).

Timeline of the studies

The majority of the studies ($n = 21$) were conducted in 2020. One study spanned 2019–2020, three between 2020 and 2021, two between late 2021, and one between 2021 and 2022 (Table 2).

Age distribution of study subjects

Of the 28 studies included, three were conducted among children and adolescents ranging in age from 0 to 20 years. Twenty-one studies were conducted on children and adolescents, the adult population, or only the adult population. Three studies did not report the ages of the subjects (Table 3).

Sex distribution of study subjects

Approximately 55.2% of the included studies included a majority of male participants (> 50%). Conversely, three studies had a higher proportion of female participants. Furthermore, three studies exclusively focused on female participants, whereas six studies did not provide information on the sex distribution of the participants (Table 3).

Medium and way of communication

Five out of 10 studies that reported the medium of communication mentioned WhatsApp as a medium. Among these five studies, one also reported an e-mail and another reported an SMS. The other five studies reported audio and video consultations as ways of communicating (Table 3).

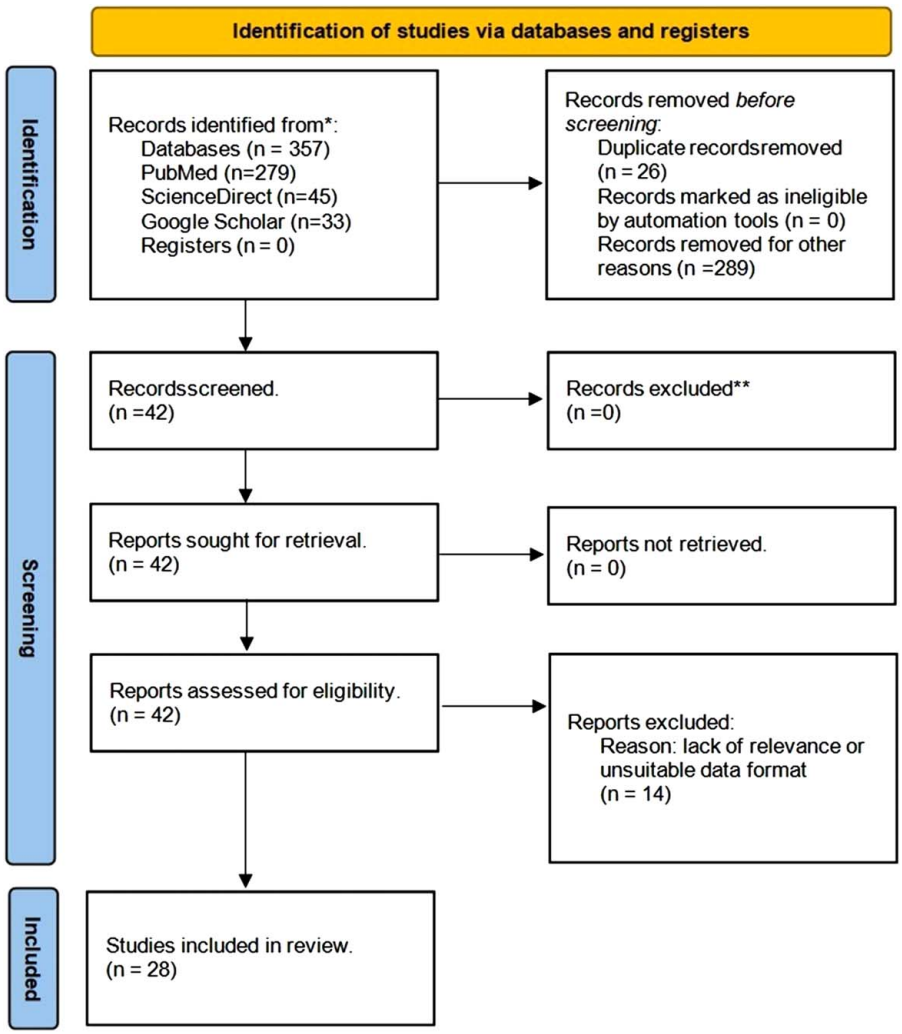

Figure 1. PRISMA flow diagram.

Advantages of TM

Five of the 28 eligible studies reported advantages of TM: ease of communication, cost-effectiveness, time savings, and avoidance of traveling were the main advantages of TM (Table 3).

Concerns about TM

Most studies ($n = 8$) reported connectivity problems, device sharing, privacy concerns, and a lack of physical diagnosis as drawbacks of TM. The participants had doubts regarding the physician's prescription and expertise (Table 3).

Level of satisfaction

One out of nine studies reported a 98% satisfaction level. Conversely, the remaining eight studies, except for one, also reported high levels of satisfaction, with the proportion of satisfied participants being above 80% (Table 3).

Table 1

Inclusion and exclusion criteria for selecting studies

Inclusion criteria	Exclusion criteria
Studies reported real-life experiences of obtaining TM service	Study design: Editorial, Letter, Commentary, Opinion, Review, Systematic Review, Meta-Analysis, Communication, Book Chapter, Thesis, Correspondence
Population-based study	Studies conducted outside South Asian countries
Patients of any age, sex, or race from the South Asian countries	Knowledge, practice, and attitude-related studies are not based on real-life experience
A user experience-based study was only included if participants opined after using the service and if the study included only patients' opinions.	Perspectives of physicians

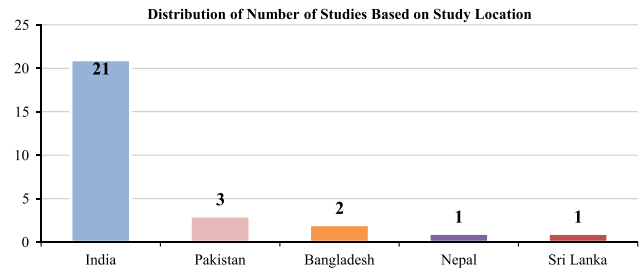

Figure 2. Distribution of the number of studies based on study location.

Quality assessment

All included studies were cross-sectional. According to the quality assessment scores reported in Table 2 and Table S1 (Supplemental Digital Content 4, http://links.lww.com/MS9/A348), three studies were low-quality studies (10.7%), 10 studies were of moderate-quality (35.7%), and 15 studies were high-quality studies (53.6%).

Use of TM for health problems

The frequency distribution of health problems related to TM in South Asia is shown in Figure 3.

Autoimmune diseases

Type 1 diabetes (T1D)-related queries are predominantly related to hyperglycemia, which is manageable at home[25]. The majority of patients seeking TM services suffer from noninflammatory arthritis (52%), followed by rheumatoid arthritis (20%)[42].

Systemic Lupus Erythematosus and noninflammatory arthritis accounted for nearly 75% of the queries. Of the total study participants, 78.5% were effectively managed through virtual treatment, while the rest were recommended urgent or nonurgent inpatient care[35].

Dermatological problems

TM accurately diagnosed 93.45% of cases in one study, with almost 43% of cases attributed to fungal or ectoparasite infections, papulosquamous diseases, or dermatitis[33]. TM successfully identified dermatological problems in 1773 (83.8%) cases in another study[24].

Cancer

Even during the lockdown period, the emergency needs of cancer patients in hospitals remained unchanged. The TM facility was only helpful for consultation regarding changes in symptoms[23,46]. TM plays a crucial role in modifying the treatment plans for cancer patients, with 19.5, 4, and 10.1% of head and neck, gynecological, and breast cancer patients, respectively[30].

Neurological disorders

Elderly patients with Epilepsy and Parkinson's disease have trouble in video consultation. Follow-up advice could be provided successfully through TM, and changes in medication were appropriate in a study based on epilepsy in children[39]. Both new medication and continuation of previous medication were also suggested among elderly patients with epilepsy, and physicians had to invest much more time in their treatment to familiarize them with the technical process. However, patients are highly satisfied with TM service[28,38,39].

Type 2 diabetes mellitus (T2DM)

The satisfaction levels among patients with Diabetes Type 2 (T2DM) were good ($n=2$)[26]. In another study in India, although 82% of patients expressed their satisfaction, technical glitches were reported, and TM was difficult for the elderly[22].

Psychiatry and mental health disorders

Many practitioners have rendered their services for mental health illnesses free of charge during the pandemic[31]. Another study on substance use disorder (SUD) showed that TM was an effective and feasible option for SUD; however, there is a restriction on prescribing antipsychotic drugs without in-person consultation[29].

Ophthalmology

The proportion of anterior and posterior uveitis cases slightly changed between the first lockdown (36.3%: 30.3%) and the second lockdown (31.5%: 35.6%). Almost 48% of TC queries were about continuing, stopping, or modifying the current medication, and 31.7% of queries were appointment related. Most of the ophthalmic problems are associated with the cornea and anterior segment (58.93%); other problems are associated with the retina, cataracts, and glaucoma[36,41].

COVID-19

A study reported that 44% of queries were associated with clinical symptoms of COVID-19, and following that, 17, 11, and 10% of queries were about diagnosis, treatment, and home isolation, respectively[47]. A Pakistani study evaluated the symptoms of these cases and suggested whether they required a definitive diagnosis of COVID-19[48].

Pediatric surgery

Almost 56% of consultations were about genitourinary ailments, and half of the patients (50.6%) required Level 4 advice (to visit the hospital after pandemic). Levels 1 (need urgent hospital visits), 2 (nonurgent hospital visits or seek teleconsultation (TC) within 1 to 2 weeks again), and level 3 (seek TC after 2 weeks or visit hospital when routine services are resumed) advice were given to 5.6, 25.8, and 18% of patients, respectively[21].

Antenatal care

Fetal complications (54.8%), followed by maternal (24.7%), and both maternal and fetal complications (20.5%) related inquiries were predominant. Although almost 97% of women exhibited low-to-moderate risk, 2.7% were marked as severe ($n=23$), where 16 patients called for an inpatient visit within 2 days, and the rest received a scheduled appointment[32].

Cardiovascular problem

Patients who were referred for physician-led consultation were mostly affected by comorbid conditions, including diabetes, hypertension, and congestive heart failure[37].

Table 2

Purpose and brief outcome of all the included studies

References	Study country	Number of participants using TM	Timeline	Purpose of study (variable investigated)	Quality assessment: Yes % (study type)
Anand *et al.* 2022[21]	India	172	June 26–26 September 2020	Pediatric surgery	57.1 (cross-sectional)
Anjana *et al.* 2020[22]	India	117	April 30– 5 May 2020	Type 2 diabetes mellitus	75.0 (cross-sectional)
Atreya *et al.* 2020[23]	India	50	January 1–19 May 2020	Advanced cancer	62.5 (cross-sectional)
Bains *et al.* 2022[24]	India	2117	April 20, 2020– 5 February 2021.	Dermatological problems	85.7 (cross-sectional)
Zabeen *et al.* 2021[25]	Bangladesh	235	March 26– 30 April 2020	Type 1 diabetes associated complications among children	71.4 (cross-sectional)
Dissanayake *et al.* 2022[26]	Sri Lanka	71	June–July 2020	Diabetes treatment	75.0 (cross-sectional)
D'Souza *et al.* 2021[27]	India	456	April–May 2020	TM satisfaction of patients from different departments	100.0 (cross-sectional)
Garg *et al.* 2021[28]	India	22	September 2020– January 2021	Neurorehabilitation of Parkinson's disease patients	75.0 (cross-sectional)
Ghosh *et al.* 2021[29]	India	326	18 May 2020–31 August 2020	Trend of using TM for substance use disorder	71.4 (cross-sectional)
Gokarn *et al.* 2022[30]	India	1783	March 23– 30 April 2020	Treatment status and management of different forms of cancer through TM	42.9 (cross-sectional)
Grover *et al.* 2020[31]	India	133	May 1–15 May 2020	Telehealth psychiatry service before and after lockdown	71.4 (cross-sectional)
Gupta *et al.* 2022[32]	India	850	May–December 2020	Antenatal care	42.9 (cross-sectional)
Handa *et al.* 2021[33]	India	6125	May 20–31 October 2020	Dermatology care	75.0 (cross-sectional)
Hosseinzadeh *et al.* 2023[34]	Bangladesh	550	NR	TM usage for health problems	100.0 (cross-sectional)
Kavadichanda *et al.* 2021[35]	India	373	April 2020	User experience of rheumatology care	57.1 (cross-sectional)
Mahendradas *et al.* 2022[36]	India	168	March 25–May 2020 and April 27–21 June 2021	Trends in uveitis healthcare	85.7 (cross-sectional)
Mohan *et al.* 2021[37]	India	12 042	September 2019–March 2020	Effectiveness of nurse-led TC services for treating cardiovascular complications	75.0 (cross-sectional)
Nair *et al.* 2021[38]	India	336	June–October 2020	Use of TM in epilepsy and the user experience of patients	71.4 (cross-sectional)
Panda *et al.* 2020[39]	India	153	March 26–17 May 2020	Effectiveness of TM in treating epilepsy among children	71.4 (cross-sectional)
Rathod *et al.* 2022[40]	India	1751	May–July 2020	Otolaryngology	71.4 (cross-sectional)
Ravindran *et al.* 2021[41]	India	977	April 1–31 May 2020	Tele-ophthalmology	57.1 (cross-sectional)
Riaz *et al.* 2022[42]	Pakistan	50	June– November 2020	Rheumatoid arthritis	50.0 (cross-sectional)
Sarkar *et al.* 2022[43]	India	252	May–June 2021	TM service satisfaction on COVID-19 and non-COVID-19 health problems	50.0 (cross-sectional)
Saxena *et al.* 2022[44]	India	5278	April 20, 2020–31 October 2020	Frequency of health problems served through TM	66.7 (cross-sectional)
Shaikh *et al.* 2021[45]	Pakistan	176	March–April 2021	Sexual and reproductive health	42.9 (cross-sectional)
Shinghal *et al.* 2021[46]	India	1103	March 23–30 June 2020.	Follow-up of gynecological cancer	50.0 (cross-sectional)
Singh *et al.* 2022[47]	Nepal	NA	May 2021–February 2022	Request for TC service for COVID-19 healthcare	50.0 (cross-sectional)
Syed *et al.* 2021[48]	Pakistan	857	26 March–25 April 2020.	TM to assist patients with COVID-19 associated management	57.1 (cross-sectional)

COVID-19, coronavirus disease-2019; NR, not reported; TC, teleconsultation; TM, telemedicine.

Table 3

Characteristics of the included studies

References	Age range/Mean ± SD/ Median (IQR)	Males	Medium of communication (Other than a phone call)	Advantage of TM reported	Concerns/ Barriers of TM	Percentage of people expressed satisfaction
Anand *et al.* 2022[21]	3 months- 20 years	76%	NR	NR	NR	NR
Anjana *et al.* 2020[22]	≥ 18 years	NR	NR	NR	Fail to express. Technical issues. Less faith in TC. Old age	82%
Atreya *et al.* 2020[23]	≥ 18 years	56%	NR	Low-cost	NR	82%
Bains *et al.* 2022[24]	2 months- 81 years	64.8%	WhatsApp	NR	NR	NR
Zabeen *et al.* 2021[25]	Children and Adolescents; Age: NR	39%	SMS, WhatsApp	NR	NR	NR
Dissanayake *et al.* 2022[26]	57.4 ± 13.4 years	54%	NR	NR	NR	NR
D'Souza *et al.* 2021[27]	43.62 years	NR	E-mail, WhatsApp, and SMS	NR	NR	95%
Garg *et al.* 2021[28]	66 years (44.0–71.0)	59.1%	NR	NR	Reduced internet access	NR
Ghosh *et al.* 2021[29]	16–70 years	98%	Audio and video consultation	NR	Poor network. Ethical issues for prescription of the antipsychotics	NR
Gokarn *et al.* 2022[30]	NR	NR	NR	NR	NR	NR
Grover *et al.* 2020[31]	NR	NR	E-mail, WhatsApp	NR	NR	NR
Gupta *et al.* 2022[32]	29.3 (19– 46) years	0%	NR	NR	NR	NR
Handa *et al.* 2021[33]	33.60 ± 16.99 year	51.9%	WhatsApp	NR	NR	Very satisfied and satisfied: 60.83% Partially satisfied: 33.45%
Hosseinzadeh *et al.* 2023[34]	≥ 18 years	66.4%	Live video chat	NR	Confusion. Discomfort. Insecurity regarding privacy	NR
Kavadichanda *et al.* 2021[35]	35 (25–44) years	10.7%	NR	NR	NR	NR
Mahendradas *et al.* 2022[36]	6 months- 86 years	48.1%	Video call	NR	NR	NR
Mohan *et al.* 2021[37]	58.9 ± 12.8 years	65.4%	Video call	NR	NR	Nurse-led TC: 92.4% Physician-led TC: 95.8%
Nair *et al.* 2021[38]	< 20– ≥ 60 years	56.7%	Video and audio consultation	Time-saving and approachable	Lack of understanding	More than 90%
Panda *et al.* 2020[39]	9.45 ± 3.24 years	62%	NR	NR	NR	96%
Rathod *et al.* 2022[40]	42.5 ± 17.9 years	63%	WhatsApp	Money-saving timesaving no travel	Difficulty in registration Less slots for appointments	65–75%
Ravindran *et al.* 2021[41]	NR	NR	NR	NR	NR	NR
Riaz *et al.* 2022[42]	47.6 ± 18.1 years	30%	NR	Less waiting time	Lack of physical examination. Technical issues. Fail to express	NR
Sarkar *et al.* 2022[43]	≥ 18 years	64%	NR	NR	NR	NR
Saxena *et al.* 2022[44]	0– ≥ 60 years	54.4%	NR	Easy access Less infrastructure is required, and no travel is necessary. No physical contact	Lack of physical examination Technical issues. Emergency. Difficult to follow-up Shortage of staff	NR
Shaikh *et al.* 2021[45]	29.0 (18–46)	0%	NR	NR	NR	86%
Shinghal *et al.* 2021[46]	> 18 years	NR	NR	NR	NR	NR
Singh *et al.* 2022[47]	NR	58.6%	NR	NR	NR	NR
Syed *et al.* 2021[48]	35.39 ± 15.44	76.3%	NR	NR	NR	NR

COVID-19, coronavirus disease-2019; IQR, interquartile range; NR, not reported; TC, teleconsultation; TM, telemedicine.

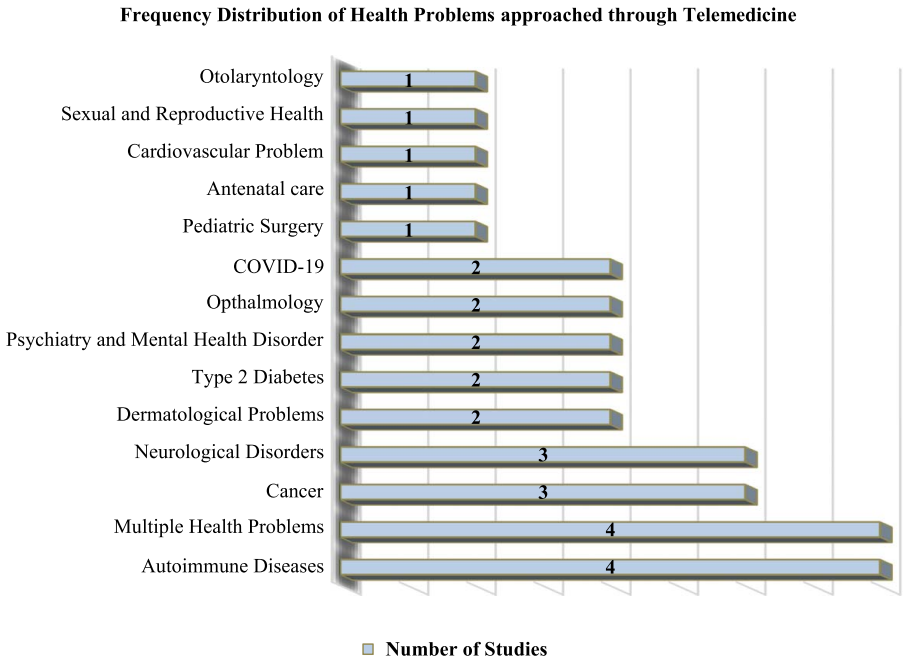

Figure 3. Types of health problems in the eligible studies.

Sexual and reproductive health (SRH)

A study in Pakistan analyzed SRH health queries through TC, which were mostly related to abortion (48%), whereas other problems were associated with contraceptives and gynecological issues (34%). Based on their problems, they received medication from nearby clinics and pharmacies, and for 74% of patients, these medications did not generate any adverse outcomes[45].

Otolaryntology

Among a total of 1751 cases in an Indian study, ~71.5% of patients reported complete recovery ($n=1252$), 20.1% of patients experienced almost no change ($n=352$), and 8.4% ($n=147$) patients experienced worsening of their condition and received telehealth services. Among the patients who denoted worsening, almost 20% of them had head and neck cancer[40].

Multiple health problems

Medicine, Obstetrics, Gynecology, Pediatrics, and Dermatology queries are mainly addressed by TM services[27]. Another study demonstrated that TM was mostly used for Radiotherapy, General Medicine, and Cardiology-associated consultations[34,43,44].

Discussion

TM is remote, accessible, economical, and offers comfort with a short waiting time. Patients felt more motivated and engaged psychologically. However, difficulty in operating devices and a lack of clearly expressing problems are challenges in TM, particularly among the elderly population[49] seeking neurorehabilitation[28]. People with chronic and fatal diseases have switched to TM during the COVID-19 pandemic[50–52]. Although the direct role of TM in ensuring tertiary care and prescribing medications solely based on TC could be debated, the application of TC in disease monitoring and prevention is predominantly useful[27,53,54]. In developed countries, TM queries during the COVID-19 pandemic were mainly related to COVID-19 due to the high burden of COVID-19, and a study in the USA reported that almost 55.3% of the TM questions were associated with COVID-19[55]. During the peak of COVID-19, COVID-19 related questions were asked almost threefold (5.5% from January to 16.2% in March)[11]. TM is mostly chosen to avoid physical contact[34], although no physical examination is required in follow-up cases of chronic illnesses[42]. Less educated people were more concerned about the authenticity of a diagnosis, as there was no facility for a physical examination[56].

TM plays a positive role in improving patients' outcomes seeking care for cardiovascular diseases, endocrinology, dermatology, psychiatry, nephrology, neurology, ophthalmology, and respiratory ailments[57] or primary healthcare (44.5%) consultations[27,58]. Queries related to radiotherapy and chemotherapy are common[44]. People with multiple diseases, young adults, and males sought TM services more[34,44]. As expected, the elderly population faced technical issues and felt challenged to avail themselves of this service; still, they were satisfied with the quality of treatment they were provided[28,59].

Current concerns and future directions

The COVID-19 pandemic has shown the effectiveness of TM in removing obstacles to the delivery and accessibility of healthcare, especially in areas with larger populations and scarcity of sources. India, Bangladesh, and Nepal published their TM guidelines in 2020, while Indonesia published guidelines in 2021. These guidelines define tools used for telehealth and their purposes. It also included codes of conduct for healthcare providers and drug prescriptions[60]. TM guidelines should be established for each

region and implemented to make this mode of healthcare delivery more effective. TM has certain limitations because the healthcare system and technological access are not equally developed worldwide. Clinical diagnosis still plays a pivotal role in disease diagnosis, and the importance of the presence of a patient is highly encouraged before starting treatment. For surgical procedures, cancer treatment with radiotherapy, and chemotherapy, the physical presence of patients is not an alternative, particularly in developing countries. Undoubtedly; however, TM practice should be ethical and transparent, in which patients can be assured of their privacy, and physicians and staff should be well qualified, trained, and licensed to render their services. TM is not sufficient for surgeries or for complicated diagnoses that may require a doctor. It cannot be used in certain situations, such as in vaccinations for newborns and infants. It is also not suitable for the management of emergencies, such as acute myocardial infarction, stroke, hypersensitivity reactions, poisoning, foreign body ingestion, active labor care, and traumatic injuries.

Conclusion

During the COVID-19 pandemic, TM services were blessings for seeking healthcare services associated with either COVID-19 or other existing health conditions in South Asia. TM is highly beneficial in primary healthcare, follow-up consultation, and evaluation of symptom changes. Most queries were related to chronic diseases (cancer and diabetes), neurology, and autoimmune diseases. However, regulated practice with well-trained physicians and staff is necessary for overall improvement of the telehealth system.

Ethical approval

The study involved no patients or living organism, so no ethical approval was required.

Consent

No patient data was used for the study.

Sources of funding

No funding or grants were available for this study.

Author contribution

M.K.S.: conceptualization; M.K.S., K.S., S.K.J., and M.T.: data curation; S.K. and A.A.: formal analysis; J.A. and M.U.R.: methodology; K.F.E. and H.S.: resources; S.A.: software; M.S.K.: supervision; S.S.K.: writing – original draft; S.T. and S.K.: writing – review and editing.

Conflicts of interest disclosure

Authors declared no conflict of interest.

Research registration unique identifying number (UIN)

Registry used: Prospero - for systematic reviews – free Unique Identifying number or registration ID : CRD42023454835 Hyperlink to registration : PROSPERO (york.ac.uk) Research Registry UIN: reviewregistry1739, available at: https://researchregistry.knack.com/research-registry#registryofsystematicreviewsmetaanalyses/registryofsystematicreviewsmeta-analysesdetails/655e0e87ec01ef0029c8a5f7/.

Guarantor

Sarosh Alvi.

Data availability statement

This was a systematic review, and no data files were available. The search strategy table is provided in a supplementary file, Supplemental Digital Content 2, http://links.lww.com/MS9/A346.

Provenance and peer review

Paper was not invited.

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