Middle East Current Psychiatry

REVIEW

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Investigating the effectiveness of using a telemental health approach to manage obsessive-compulsive disorder: a systematic review

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Abstract

Background Obsessive-compulsive disorder is a mental disorder that leads to impairment in various cognitive functions. Telemental health is applied in providing several telemental health and psychiatric services. It can provide health and psychological care, such as counseling, diagnosis, and treatment. Therefore, this study systematically examines the effectiveness of using a telemental health approach to manage obsessive-compulsive disorder.

Methods We searched PubMed, Web of Science, and Scopus using the keywords telepsychiatry, telemental health, telemedicine, telehealth, videoconferencing, obsessive-compulsive disorder, and OCD up to November 2023. In addition to searching the mentioned databases, references to related articles were also examined.

Results In this study, based on the search strategy, we identified 130 articles, 4 duplicate articles were removed, and the title and abstract of 126 articles were reviewed. Considering the selection criteria, 104 articles were excluded and 22 articles were included in the study. In 77.27% of the articles, videoconference telecommunication methods were used for communication. In 8 articles, the participants were children and adolescents. Reviewing these studies indicates mentions concerning the effectiveness of this method in most of them.

Conclusions In general, telemental health interventions increase access to treatment and can be promising for patients with certain conditions. This systematic review contributes to the expanding literature indicating that delivering CBT through telemental health methods, particularly videoconference-based approaches, is a feasible substitute for in-person treatments.

Keywords Obsessive-compulsive disorder, Telemental health, Telepsychiatry, Telemedicine

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Introduction

Obsessive-compulsive disorder (OCD) is a mental disorder that leads to impairment in various cognitive functions. This disorder is associated with repetitive thoughts and behaviors that cause disability and impairment in daily functioning. The symptoms of this disorder include compulsive activities and obsessive thoughts [1] that start in childhood and adolescence [2]. More women suffer from this disorder in adulthood and men in childhood [2, 3]. Intrusive thoughts are usually associated with a feeling of not being complete and not right and lead to compulsive behaviors such as frequent checking [4]. Several factors such as genetics, childhood injuries, complications of pregnancy and childbirth, and stressful events can be effective in causing and aggravating the disease [5]. Many people suffer from this mental disorder worldwide [6]. OCD is considered one of the diseases that affects and severely reduces the quality of life [7]. Cognitive behavioral therapy (CBT) is among the basic methods of treating obsessions. This method emphasizes exposure and response prevention (ERP) and is the most extensively validated psychosocial treatment for individuals of all ages with OCD. Meta-analyses have demonstrated significant positive outcomes of this method concerning its effectiveness [8, 9]. This method aims at changing habits and rebuilding thoughts and minds. As a result, the patient can face his fear in stressful situations and reduce his compulsive behaviors [10]. However, there are many obstacles to accessing this type of treatment, such as the limitation of therapists, high treatment costs, stigmatization, and embarrassment for patients [11].

Telemedicine is a method to provide medical services through telecommunications technologies. This technique is mainly applied to provide services to remote and geographically distant areas. One of the most widely used technologies in telemedicine is videoconferencing, which makes it easy for therapists to see patients and give them advice in real-time. Cost-effectiveness and providing quality treatment are among the advantages of telemedicine [12]. Telemedicine can provide health and psychological care, such as counseling, diagnosis, and treatment [13]. However, the use of telemedicine still involves challenges such as patient privacy, confidentiality aspects, technical issues, and training of doctors and patients [14]. Telemental health is applied in providing several telemental health and psychiatric services [15]. Various studies [16–20] have investigated the use of telemental health for disease management of patients with OCD. Integrating telemental health technology with evidence-based treatments and drug therapy can facilitate the management and treatment of the disease and promote clinical benefits. Despite potential problems in this field, using communication technology in telemental health can be effective by focusing on an ERP method [21]. Therefore, this study systematically examines the effectiveness of using a telemental health approach to manage obsessive-compulsive disorder.

Methods

This systematic review study investigates the effectiveness of using a telemental health approach to manage OCD in 2023 based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist [22]. Figure 1 shows the process of selecting articles.

Data sources

We searched PubMed, Web of Science, and Scopus using the keywords telepsychiatry, telemental health, telemedicine, telehealth, videoconferencing, obsessive-compulsive disorder, and OCD up to November 2023. In addition to searching the mentioned databases, references to related articles were also examined.

Study selection

Two researchers independently retrieved relevant articles based on titles and abstracts. Then, the full text of the articles was reviewed, and the most relevant articles were selected considering the inclusion and exclusion criteria. The disagreement between the two authors was resolved by reaching a consensus with the third author. In the last step, data was extracted from the articles and organized in tables.

The inclusion criteria were (1) original articles and reports, (2) articles in English, and (3) articles related to the purpose of the study. Also, exclusion criteria were (1) review articles, systematic reviews, letters to the editor, and protocols, (2) articles not related to the purpose of the study, and (3) lack of access to the full text of the articles.

Data extraction

Two researchers reviewed the articles, extracted the desired data, and entered the tables. Data included authors, year, country, study objective, telecommunication method, participants, and outcome.

Results

In this study, based on the search strategy, we identified 130 articles, 4 duplicate articles were removed, and the title and abstract of 126 articles were reviewed. Considering the selection criteria, 104 articles were excluded and 22 articles were included in the study.

According to the results, most of the studies were conducted in the USA (n = 9), and the remaining

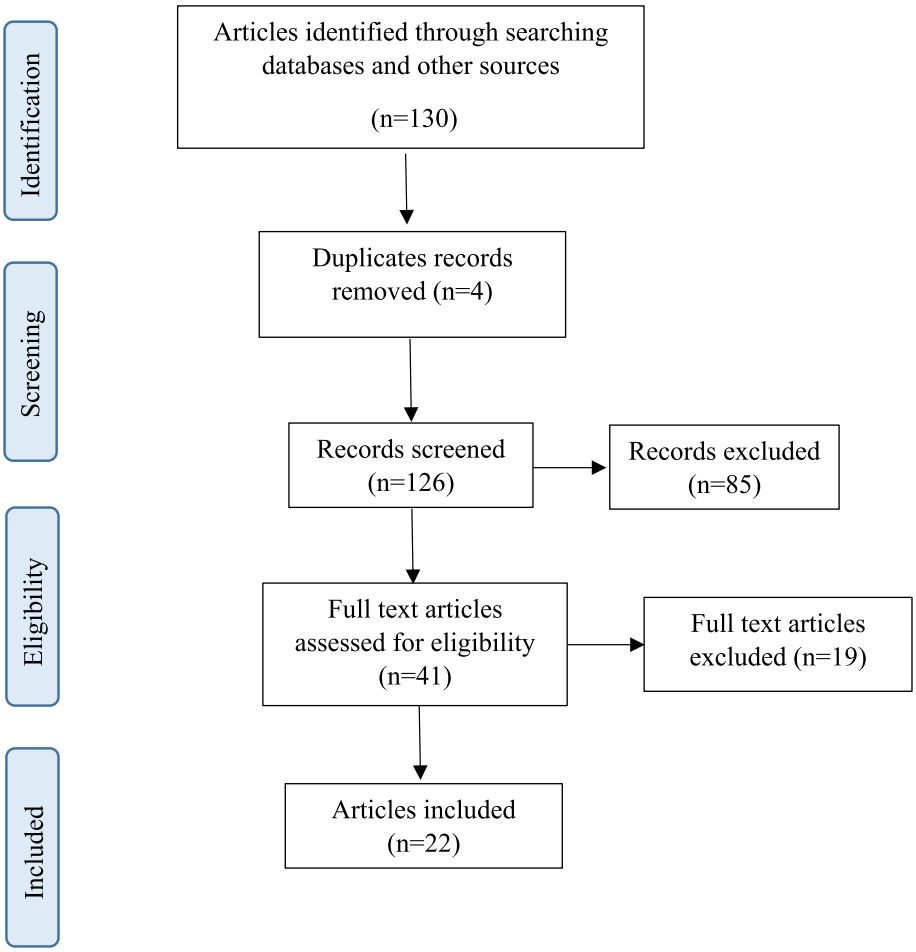

Fig. 1 The flow diagram of the selection of articles

studies were in Australia ($n = 3$), Japan ($n = 2$), Norway ($n = 2$), Germany ($n = 2$), China ($n = 1$), Canada ($n = 1$), India ($n = 1$), and Sweden ($n = 1$). Most studies were published in 2022 ($n = 7$) and 2014 ($n = 5$). In 77.27% of the articles [16–20, 23–34], video conference telecommunication methods were used for communication. Other methods provided included telephone calls [35, 36] and computer and online platforms [35, 37–39]. In 8 articles, the participants were children and adolescents [16, 18, 19, 27, 32, 35, 36, 39] with OCD. In the rest of the articles, the participants were adults [20, 23, 25, 26, 28–31, 33, 38] and veterans [24] with OCD. Using the results of these studies, the effectiveness of using telemental health was determined based on the positive results obtained in the treatment and management of OCD of the participants. Reviewing these studies indicates mentions concerning the effectiveness of this method in most of them. The main findings of these articles are summarized in Table 1.

Discussion

OCD is a severe neurobehavioral condition that often leads to significant impairments in various aspects of a person's life, persisting throughout their lifespan [40]. Improving access to evidence-based therapy can be accomplished by implementing more efficient therapy delivery models that maximize outreach while maintaining integrity and effectiveness [19]. Telemental health has long been extensively employed by medical professionals to efficiently treat behavioral disorders [34, 41, 42]. The objective of this systematic review was to evaluate the effectiveness of using a telemental health approach to manage obsessive-compulsive disorder.

After completing the search strategy, we obtained a total of 130 results. Of these studies, 22 unique papers were identified and included. The dissemination of more than 50% of the studies conducted in the last 2 years indicates that this type of care delivery is at the forefront of current research in OCD therapy. Overall, the studies aimed to assess the feasibility [16, 18, 24, 26, 29–32]

Table 1 Main characteristics of the included studies

Author	Year	Country	Objective	Telecommunication method	Participants	Outcome
Adam et al. [16]	2022	Germany	Evaluation of an online treatment management program using videoconferencing to treat OCD.	Videoconference	Children and adolescents with OCD ($n = 5$), ages 8 and 18 years	The use of video teleconferencing as a combined method reduced the severity of obsessive-compulsive disorder.
Baer et al. [17]	1995	USA	Investigating the effect of using telemedicine and comparing it with face-to-face treatment for patients with OCD.	Videoconference	Patients with OCD ($n = 16$)	The effectiveness of using telemedicine for OCD symptoms was evident in the results.
Comer et al. [18]	2014	USA	Investigating the treatment of early symptoms of OCD using video conferencing.	Videoconference	Children with OCD ($n = 5$), ages of 4 and 8 years	The improvement of symptoms and severity of the disease was determined using videoconferencing.
Farrell et al. [19]	2022	Australia	Investigating the effectiveness of telehealth education for the treatment of OCD.	Videoconference	Children with OCD and parents ($n = 9$), ages 8 to 14 years	Providing education through telehealth for the management of OCD was partially effective.
Feusner et al. [20]	2022	USA	Investigation of OCD treatment with online teletherapy.	Video teletherapy	Patients with OCD, ages ≥ 18 years	The results showed that the use of online video teletherapy reduces the symptoms of the disease.
Fitt and Rees [23]	2012	Australia	Investigating the effect of cognitive therapy through video conferencing for OCD.	Videoconference	Adults with OCD ($n = 4$), ages 34 to 66 years	The effectiveness of the video conference to reduce the symptoms of OCD was evident in the results.
Fletcher et al. [24]	2022	USA/Texas	Investigating the effectiveness of telehealth for exposure prevention and response of rural veterans with OCD.	Videoconference	Veterans ($n = 11$) with OCD, mean age 47.2 years	Telehealth videos were effective in reducing disease symptoms.
Gittins Stone et al. [25]	2023	USA	Investigating the effect of using cognitive behavioral therapy using videoconferencing to treat children with obsessive-compulsive disorder during the COVID-19 pandemic.	Videoconference	Children and adolescents with OCD ($n = 130$), ages 8–19 years	The results showed that the use of videoconferencing to treat children reduces their symptoms.
Goetter et al. [26]	2014	USA	Investigating the effectiveness of videoconferencing for the treatment of OCD.	Videoconference	Adults with OCD ($n = 15$), mean age of 32.2 years	The use of videoconferencing improves the symptoms of OCD and can be an alternative to face-to-face methods.
Himle et al. [27]	2006	USA	Treatment of OCD using video conferencing.	Videoconference	Patients with OCD ($n = 3$), ages 19 to 39 years	The treatment using video conference was effective and resulted in patient satisfaction.
Hollmann et al. [28]	2022	Germany	Investigating the effectiveness of internet-based treatment for patients with OCD.	Videoconference	Children and adolescents with OCD ($n = 60$), ages 6 to 18 years	Symptom improvement in patients with OCD using the telemedicine method was high.

Table 1 (continued)

Author	Year	Country	Objective	Telecommunication method	Participants	Outcome
Kathiravan and Chakrabarti [29].	2023	India	Investigating and feasibility of treating OCD using video conferencing in the COVID-19 pandemic.	Videoconference	Patients with OCD (n = 115), mean age 31.27 years	The findings showed that the treatment through video conferencing is suitable for OCD.
Lenhard et al. [30]	2014	Sweden	Investigating the feasibility and efficacy of a therapist-led platform for the treatment of OCD.	Web-based platform and call	Adolescents with OCD (n = 21), ages 12–17 years	Using this platform, especially for adolescents, can be used as an effective tool in supporting treatment.
Lin et al. [31]	2020	China	Remote treatment of patients with psychiatric disorders during COVID-19.	Telemedicine platform	Patients with psychiatric disorders (patients with OCD (n = 2))	The results showed that the use of a telemedicine platform could provide effective medical care for the treatment of mental disorders during COVID-19.
Matsumoto et al. [32]	2018	Japan	Investigating the feasibility of cognitive behavioral therapy through video conferencing for patients with obsessive-compulsive disorder.	Videoconference	Adults with OCD (n = 30), mean age 35.4 years	It is possible to use cognitive behavioral therapy through video conferencing to treat OCD and it can reduce symptoms.
Matsumoto et al. [33]	2020	Japan	Investigating the effect of using videoconferencing for patients with OCD in Japan.	Videoconference	Adults with OCD (n = 25), ages 20 to 54 years	The results showed that the use of videoconferencing is an effective and cost-effective method for treating patients with OCD.
Milosevic et al. [34]	2022	Canada	Comparison of face-to-face and telemedicine methods for managing anxiety and mental disorders.	Videoconference	Patients with anxiety disorders (n = 413), ages ≥ 18 years	The use of videoconferencing for the management of anxiety and mental disorders was promising and is considered an alternative to the face-to-face method.
Pinciotti et al. [35]	2022	USA	Investigating the effectiveness of telehealth for the treatment of OCD in the COVID-19 pandemic.	Computerized platform	Patients diagnosed with OCD (n = 468), ages 18 to 75 years	Treatment via telehealth was as effective as face-to-face treatment.
Storch et al. [36]	2011	USA	Investigating the effectiveness of treating OCD using a web camera.	Online program (using a webcam)	Youth with OCD (n = 31), ages 7–16 years	Using the web camera-based method improved symptoms in young people with OCD.
Turner et al. [37]	2014	Australia	Evaluation of the effectiveness of treatment of OCD over the phone for adolescents.	Call	Adolescents with OCD (n = 72), ages 11 to 18 years	The results showed that the treatment using the phone can be as effective as the face-to-face method and is associated with patients' satisfaction.
Vogel et al. [38]	2012	Norway	Treatment of OCD using video conferencing and mobile phones.	Videoconference	Patients with OCD (n = 6), ages 24 to 44 years	OCD symptoms decreased by 50% with the use of mobile phone video conferencing.

Table 1 (continued)

Author	Year	Country	Objective	Telecommunication method	Participants	Outcome
Vogel et al. [39]	2014	Norway	Investigating the effectiveness of cognitive behavioral therapy using video conferencing for the treatment of OCD.	Videoconference	Patients with OCD ($n = 30$)	The treatment through video conference reduced the symptoms.

and evaluate the effectiveness [16–20, 23–39], acceptance [20, 24, 26–30, 32, 38], satisfaction [16, 18, 24, 26–29, 32, 36], and perception of patients and practitioners using telemental health for treating OCD [24, 28]. Furthermore, their objective was to evaluate the efficacy of these interventions in comparison to traditional in-person methods [25, 34, 35, 37] or control groups that had not yet received any form of treatment [28, 36, 39]. In this respect, Orsolini et al. [13] also mentioned the effectiveness of telemental health to overcome the obstacles of mental health care.

Regarding the feasibility and effectiveness, the studies provide promising evidence that delivering CBT through telemental health approaches is feasible [16, 18, 24, 26, 29–32] and has the potential to be equally effective as in-person treatment across different age groups [25, 26, 28, 34, 35, 37, 39]. The results of the randomized clinical trial study showed that the CBT method using the computer is accepted by young people with mental problems [43].

The majority of the studies demonstrated effectiveness in terms of alleviating symptoms of depression, anxiety, and stress [16, 18–20, 24–26, 28, 30, 32, 34–36] and improving quality of life [20, 24, 26, 28, 32, 33, 35]. Studies also offer proof of effectiveness by demonstrating improvements in recovery rates and reductions in treatment duration [16, 19, 27, 28, 30, 32, 33, 36]. Furthermore, some studies provide evidence of effectiveness by highlighting the advantages of cost and time savings [18–20, 29, 30, 33]. The estimated timeframe for this improvement is predicted to be less than 50% of the total therapist time and less than 50% of the duration of a typical once-weekly in-person CBT session [20]. The results of a meta-analysis study have also emphasized the effectiveness of telemental health interventions and pointed to conducting more trial studies to investigate this method's effectiveness, feasibility, and acceptability [44].

The coronavirus disease 2019 (COVID-19) pandemic and the need for physical separation accelerated the adoption and using of telemental health services for various behavioral disorders [45–49]. Telemental health practitioners have substantially augmented their daily use of telehealth to handle their patient workload, which has nearly doubled since the initiation of the COVID-19 pandemic [45]. Our research has discovered four papers that specifically investigated the effectiveness of telemental health strategies for delivering CBT during the global pandemic. These studies have highlighted the favorable impact of this technique in this specific context. Overall, these works have determined that telemental health services are effective and appropriate alternatives for in-person care, especially during the pandemic. By enabling convenient access to psychiatric care, they can overcome different barriers linked to traditional services, augment user satisfaction, and empower the underserved population residing in remote regions [25, 29, 31, 35].

Most of the studies identified in our research apply videoconferencing [16–20, 23–29, 32–34, 38, 39] as a central telemental health strategy for delivering CBT. In addition to this method, online and computer platforms [30, 31, 35, 36] and calls [30, 37] were also used to manage the disease However, videoconferencing is a highly valuable technique to deliver telemental health services, as it closely resembles well-accepted in-person therapy [27]. Besides, this service is highly accessible [20]. Recent experiments have introduced supplementary functionalities to videoconferencing, including chat features, a virtual whiteboard for material presentation, an online data cloud system for assignment and progress restoration, and a physiological wristband for setting timestamps for different events [18, 28].

In general, to manage OCD, it is possible to use a telemental health approach. Moreover, as a therapeutic support tool, it can improve OCD. Since it is possible to practice at home using the telemental health method, the effectiveness of the method will increase, thereby providing the therapists with more opportunities to understand and pay attention to the patient's behavior [24]. Paying attention to the mental health of special age groups such as children and youth and integrating their treatment with available methods (e.g., telemental health) are points that future research should pay attention to.

One of the limitations of this study is the non-inclusion of articles that did not have access to their full text. A common limitation of any systematic review is that not every relevant study may be found. This issue was considered during the peer review process when another relevant study was revealed.

Conclusion

Telemental health interventions increase access to treatment and can be promising for patients with certain conditions. This systematic review contributes to the expanding literature indicating that delivering CBT through telemental health methods, particularly videoconference-based approaches, is a feasible substitute for in-person treatments. These approaches enhance the availability of state-of-the-art treatment and provide potential relief to individuals who would otherwise lack access to high-quality mental health care. This issue is especially crucial during a global pandemic.

Abbreviations

OCD	Obsessive-compulsive disorder
CBT	Cognitive behavioral therapy
ERP	Exposure and response prevention
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
COVID-19	Coronavirus disease 2019

Acknowledgements
None

Authors' contributions
The concept and design of the study were performed by ZK. Selection and evaluation of the studies and data extraction were conducted by ZK and PE. AS and MZ contributed to drafting the manuscript. All authors read and approved the final version of the manuscript.

Funding
The authors received no financial support.

Availability of data and materials
Not applicable

Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
Not applicable

Competing interests
The authors declare that they have no competing interests.

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Received: 21 February 2024 Accepted: 13 March 2024
Published online: 19 April 2024

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