

# Telemental health for clinical assessment and treatment

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## Abstract

Telemental health—the use of videoconferencing or audio only (telephone) in mental health care—has accelerated tremendously since the start of the covid-19 pandemic. Meta-analyses have examined the reliability (ie, concordance) of assessment and the efficacy/effectiveness of telemental health compared with in-person care. Results indicate that telemental health assessment and clinical outcomes are similar compared with in-person care but there is much unexplained variability, as well as evidence that patient clinical and demographic characteristics can influence these findings. Further, gaps exist in the literature regarding specific patient populations (eg, psychotic disorders, children/adolescents), treatment modalities (eg, group therapy), audio only telemedicine, and hybrid care that mixes in-person with telemental health care. These gaps provide important directions for the next generation of telemental health research. Comprehensive clinical guidelines from mental health organizations are available to telemental health practitioners and focus on five content themes: legal and regulatory issues, clinical considerations, standard operating procedures and protocols, technical requirements, and considerations of specific populations and settings.

## Introduction

Before the covid-19 pandemic, the use of telemedicine (ie, care delivered via videoconferencing or phone/audio only) had been increasing in mental healthcare but was not prevalent.<sup>1-3</sup> The pandemic, with its pressure to enact social distancing when possible and a concomitant relaxation of healthcare payment and regulatory policies to facilitate rapid adoption of telemedicine, vastly accelerated its use, particularly for the care of mental health conditions.<sup>4-8</sup> Several terms have been used to describe the delivery of mental healthcare via telemedicine, including telemental health, telepsychology, telepsychiatry, and teletherapy. These terms can encompass a variety of different technology based modalities such as videoconferencing, telephone, mobile applications (apps), websites, and text messaging. In this review, we focus on synchronous interactions (ie, videoconferencing and telephone). We use the term “telemental health” as defined by the United States’ National Institute on Mental Health as the “use of telecommunications or videoconferencing technology to provide mental health services.”<sup>9</sup>

It is perhaps not surprising that the adoption of telemental health has been particularly robust. Mental healthcare, which commonly does not rely on physical examination of patients, may be uniquely suited to telemedicine. Prior to the pandemic, there had been considerable study of its efficacy

and effectiveness, particularly for depression and anxiety disorders.<sup>10</sup> Further, ample literature describes the benefits of telemedicine for improving access to care for patients who would need to travel long geographical distances to access care, who are caregivers and find it difficult to leave home for appointments, or who have jobs that make it difficult to access care if they had to leave work to do so.<sup>11-14</sup> Provided that the favorable health policy and payment environment continues, telemental health has the potential to remain as a routine approach to patient care for mental health conditions.<sup>15 16</sup>

Given the potential for the newly prominent ongoing role for telemental health, it is important to understand the scope of the evidence base for telemental health thus far. This narrative review fills a gap in the literature by summarizing meta-analyses on telemental health. Given the volume and complexity of the telemental health literature (spanning several decades and including a variety of study methodologies, patient populations, and settings), a narrative review provides clarity to the scope and strength of the telemental health literature. We are unaware of any prior narrative reviews that summarize meta-analyses for telemental health. This review also further assists clinicians in their ongoing or continued use of telemental health by providing a summary of telemental health guidelines. Thus, the combination of these two literature types that

summarize the evidence base and the guideline contents provides clinicians with an implementation framework for considerations of best practice in their use of telemental health.

### Epidemiology

Worldwide, it is estimated that one in eight individuals lives with a mental illness, most commonly anxiety and depression.<sup>17</sup> The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) notes that mental disorders are among the top 10 causes of disease burden worldwide<sup>18</sup> and GBD estimates are considered to be an underestimate of the burden of mental disorders because they do not take into account premature mortality caused by mental illness.<sup>18 19</sup> Despite the high burden of mental illness worldwide, access to care for these illnesses is often inadequate. For example, recent estimates from the World Health Organization find that only approximately one in six individuals with major depressive disorder—one of the most prevalent mental illnesses globally—receive minimally adequate treatment.<sup>20</sup> In the United States, recent estimates indicated that less than half (46.2%) of those with a mental illness received treatment.<sup>21</sup>

The covid-19 pandemic was a major disrupter of healthcare.<sup>22</sup> In an effort to maintain access to care, telemental health use increased substantially and globally during the pandemic.<sup>22-24</sup> However, the prevalence of its use has varied widely with most reports of telemental health coming from the United States, Europe, and Australia and fewer reports from middle and lower income countries.<sup>22 23 25-27</sup> Additionally, even within a country, including those with more robust adoption, its use varies widely by geographical region and urbanicity,<sup>28 29</sup> and among patients who are more socio-economically disadvantaged and among racial/ethnic minorities.<sup>28 30-32</sup>

### Sources and search criteria

We conducted an electronic search of PubMed and PsycINFO databases, with the last search on 23 February 2022 (see appendix 1). The following search algorithm was used: ((telemedicine OR telehealth) AND (mental health OR psychiatry OR psychology)) OR telepsychiatry OR telemental health. Given the large number of articles on this topic, we limited our initial search to reviews, systematic reviews, and meta-analyses. To be included in this review, articles had to (1) be published in English, (2) evaluate mental health outcomes, (3) define telehealth as synchronous phone or video delivery, (4) focus on a mental health population, and (5) focus on the effectiveness or efficacy of telemental health. Articles were excluded if they (1) focused on asynchronous delivery (eg, mHealth, wearables, self-guided internet interventions, ecological momentary assessment), (2) focused on the mental health of caregivers, (3) examined satisfaction with telehealth, or (4) focused on a population with a medical disorder. We excluded articles in which the

systematic review/meta-analytic patient population was defined as having a particular medical problem and a co-occurring mental health condition (eg, cancer and depression). We retained meta-analyses that included such populations but it was not the focus of the review/meta-analysis. For example, a review/meta-analysis examining telemedicine for treating depression was not excluded if it included several studies of populations with co-occurring depression among those with a medical condition; however, if it included only studies where depression was co-occurring then that review/meta-analysis was excluded. Review articles that examined a mix of synchronous and asynchronous intervention studies were only included if subgroup analyses were conducted that reported the effect of synchronous interventions (videoconferencing and phone/audio only) separately.

The two authors independently screened titles and abstracts for inclusion, and all discrepancies were discussed and resolved. In addition, we searched reference lists of included articles. In reviewing the articles, we noted that the literature was very heterogeneous and varied according to quality, diagnosis, and other topic areas. To meaningfully summarize the literature, we decided to limit the scope of this review to systematic reviews that conducted meta-analyses. As we note above, reviewing the meta-analytic literature allows for a more systematic evaluation of the evidence base for telemental health, identifying both where the strengths, as well as limitations and gaps, are in the literature. Additionally, upon closer inspection, we excluded studies of telemental health in primary care because the underlying studies in these meta-analyses did not uniformly evaluate equivalent treatment (ie, mental healthcare delivered in person versus via telehealth), and instead evaluated add-on psychotherapy or counseling delivered via telemedicine versus “treatment as usual” (TAU), which typically did not include in-person psychotherapy or counseling as part of the primary care depression treatment.

In total, eight reviews with meta-analyses met our criteria for inclusion. To better understand the quality of the literature, we used the AMSTAR 2 (A MeaSurement Tool to Assess systematic Reviews) checklist.<sup>33</sup> The two authors independently completed the AMSTAR 2 checklist for each of the eight articles. Ratings were compared, and any discrepancies were discussed and resolved for final consensus.

### Characteristics of included articles

The eight systematic reviews with meta-analyses included were published between 2013 and 2021, with five of them published in 2021. All had more than one AMSTAR 2 critical flaw,<sup>33</sup> which categorizes them as of “critically low confidence” (see appendix 2). The more common critical flaws (occurring in at least half of the reviews) related to establishing methods of review, justifying any subsequent deviations from the methods, and risk of bias assessments and

Table 1 | Descriptive characteristics of the included meta-analytic literature

Study	Year range of studies	Characteristics of included studies	Modality	Sample size	Diagnostic populations	Meta-analysis results	Clinical implications
<b>Assessment</b>							
Batastini et al 2021 <sup>34</sup>	1997-2019	14 studies (adult=13; child=1) Comparison group: in person	Video	n=332	Dementia=6 Psychotic disorder=3 Aphasia=1 Multiple dx=1 Depression=1 PTSD=1 Intellectual disability=1	Hedges' g=0.07, 95% CI -0.02 to 0.17	Assessments conducted via VC or in person provided similar measurement scores
Drago et al 2016 <sup>35</sup>	2000-15	12 studies (adult=10; child=2) RCTs only Comparison group: In person	Video	n=765	Multiple dx=6 Dementia=2 Psychotic disorder=3 Autism=1	Correlation coefficient=0.73, 95% CI 0.63 to 0.83	Assessment was found to be highly consistent between VC and in-person settings
<b>Treatment</b>							
Batastini et al 2021 <sup>34</sup>	2002-19	43 studies (adult=38; child=5) Comparison group: in person	Video	n=4336	Trauma/anxiety=15 Mood disorder=15 Psychotic disorder=2 Other=8 Unspecified=3	Hedges' g=-0.02, 95% CI -0.12 to 0.94	VC and in-person treatment associated with similar changes in mental health symptoms. Some potential evidence that there may be a sex difference (that VC is superior to in-person care for women)
Drago et al 2016 <sup>35</sup>	2005-15	11 studies (adult=10; child=1) RCTs only Comparison group: In person	Video	n=1227	Multiple dx=2 PTSD=3 MDD=3 ADHD=1 Eating disorder=1 Dementia=1	SMD=-0.11, 95% CI -0.41 to 0.18	Mental health counseling was similarly effective if conducted via VC or in person
McLellan et al 2021 <sup>37</sup>	2010-19	17 studies (all adult veterans) RCTs only Comparison group: in person	Video, phone	n=1716	PTSD=13 Depression=2 PTSD/depression=1 Chronic pain=1	<b>Depression</b> VC: Cohen's d=0.00, 95% CI -0.14 to 0.13 Phone: Cohen's d=-0.09, 95% CI -0.33 to 0.14 <b>Trauma</b> VC: Cohen's d=-0.25, 95% CI -0.39 to -0.11 Phone: Cohen's d=-0.34, 95% CI -0.56 to -0.11	Among veteran populations, VC and phone counseling seem to be as effective as in-person treatment in reducing depressive symptoms. Conversely, in-person treatment may be more effective than VC or phone in reducing PTSD symptoms in veterans; however, the effect sizes were small
Norwood et al 2018 <sup>36</sup>	2010-15	4 studies (all adult) RCTs only Comparison group: in person	Video	n=246	Mood or anxiety disorder=1 PTSD=1 Unspecified=1 Eating disorder=1	<b>Working alliance</b> SMD=-0.30, 95% CI -0.67 to 0.07 <b>Symptom reduction</b> SMD=-0.03, 95% CI -0.45 to 0.40	In-person treatment was superior to VC for establishing working alliance; however, clinical outcomes, defined as symptom reduction, were similar between VC and in-person treatment
McLean et al 2021 <sup>38</sup>	2006-19	9 <sup>†</sup> studies (adult/child mixed) RCTs only Comparison group: in-person, internet resources, or TAU	Mostly video (1 phone)	n=560 (children) n=255 (families with parental depression)	OCD=1 ODD/conduct=2 Obesity=1 Behavior problems=5	<b>Child behavior</b> Hedges' g=-0.17, 95% CI -0.46 to 0.12 <b>Parental depression</b> Hedges' g=-0.32, 95% CI -0.57 to -0.07	For child behaviors, family therapy delivered by TMH had similar outcomes to in-person care; however, outcomes related to parental depression were better in the TMH group. Results should be considered preliminary because of small number of studies
Osenbach et al 2013 <sup>39</sup>	2000-12	14 studies (adult=13; child=1) RCTs only Comparison group: in person, TAU	Video, phone	n=1734	Depression=7 General MH=3 PTSD=2 Eating disorder=1 OCD=1	Hedges' g=-0.11, 95% CI -0.29 to 0.06 Hedges' g=0.29, 95% CI 0.16 to 0.41	TMH and in-person treatment seem to be equally effective in reducing depressive symptoms. TMH may be better than TAU at reducing depressive symptoms; however, this finding may be confounded by the frequency and intensity of TAU, which varied and was not always comparable with TMH
Hanach et al 2021 <sup>40</sup>	2013-19	7 studies (all adult) RCTs only Comparison group: TAU	Phone, website	n=1129	Postpartum women <sup>‡</sup>	<b>Overall</b> Mean difference=-1.81, 95% CI -2.68 to -0.93 <b>Phone v TAU</b> Mean difference=-1.17, 95% CI -1.80 to -0.55	TMH may be better at reducing PPD symptoms compared with TAU in postpartum women. TMH in these studies was fairly low intensity; however, TAU varied significantly in content, type, and providers
Zhao et al 2021 <sup>41</sup>	2003-20	9 studies (all adult) RCTs only Comparison group: TAU	Phone, app, website	n=1958	Postpartum depression	<b>Overall</b> Mean difference=-2.99, 95% CI -4.52 to -1.46 <b>Phone v TAU</b> Mean difference=-2.18, 95% CI -2.64 to -1.72	TMH may be better at reducing PPD symptoms compared with TAU in women with PPD; however, there was significant heterogeneity within the TMH interventions and TAU

\*The only study that specifically notes exclusion criteria included intervention arms that were adjunctive treatment. †Eight studies examined child outcomes; three studies examined parental depression outcomes. ‡No restriction on baseline postnatal depression scores. ADHD=attention deficit/hyperactivity disorder; CI=confidence interval; dx=diagnosis; MDD=major depressive disorder; MH=mental health; OCD=obsessive compulsive disorder; ODD=oppositional defiant disorder; PPD=postpartum depression; PTSD=post-traumatic stress disorder; RCT=randomized clinical trial; SMD=standardized mean difference; TAU=treatment as usual (ie, telemedicine as an adjunctive treatment); TMH=telemental health (ie, unspecified); VC=videoconference.

interpreting of results. In addition to examining the efficacy of telemental health for treatment purposes, two reviews also conducted separate meta-analyses examining the concordance of clinical assessments via telemedicine with in-person assessments.<sup>34 35</sup> Three meta-analyses investigated telemental health via video technology,<sup>34-36</sup> three via video or phone,<sup>37-39</sup> and two via phone only.<sup>40 41</sup> Four meta-analyses included studies with adult only samples.<sup>36 37 40 41</sup> While the remaining four included studies in adult and child populations, the overwhelming majority of included studies were in adult populations, with the exception of McLean et al<sup>38</sup> (a meta-analysis on the effectiveness of family therapy), for which a majority of the included studies were conducted in child/adolescent populations. Most of the articles included mixed samples regarding mental health symptoms or diagnoses. Three reviews with meta-analyses examined whether telemental health, broadly speaking, is effective compared with in-person treatment,<sup>34 35 37</sup> one of these focused specifically on veterans.<sup>37</sup> Three reviews examined telemental health in depression care: one focused on depression in adults<sup>39</sup> and two on women with postpartum depression.<sup>40 41</sup> One examined working alliance, along with clinical outcomes,<sup>36</sup> and another examined clinical outcomes in family therapy, including parental depression outcomes.<sup>38</sup> In addition to the limited inclusion of studies among

child/adolescent populations, there were few studies conducted in populations with psychotic disorders that were included in the meta-analyses. All reviews limited their searches to publications in English, apart from Zhao et al,<sup>41</sup> which also included Chinese language publications. Table 1 shows additional characteristics of the included meta-analytic reviews.

### Telemental health for clinical assessment

Clinical assessments via telemedicine can take the form of diagnostic assessments that are structured or unstructured and can also include clinical rating scales. Two of the reviews on treatment efficacy also included separate meta-analyses of clinical assessment (ie, comparing telemental health with in person for concordance)<sup>34 35</sup>; therefore, we included a summary of these findings. Cognitive and neuropsychological assessments via telehealth were beyond the scope of this treatment efficacy focused review; however, recent meta-analyses have investigated the evidence base for remote delivery of neuropsychological testing specifically and found concordant results between cognitive and neuropsychological testing conducted via videoconferencing compared with in person, particularly for tests that rely on verbal responses from patients.<sup>42 43</sup>

There were some methodological similarities and differences between the two meta-analyses on clinical assessment. Both reviews required that included

**Table 2 | Summary of topics included in telemental health guidelines by organization**

	American Psychiatric Association	American Psychological Association	AACAP	WPA
<b>Legal and regulatory issues</b>				
Licensure and malpractice	X	X	X	X
Scope of practice/competence	X	X	X	X
Prescribing	X	NA	X	X
Informed consent	X	X	X	X
Billing and reimbursement	X	X	X	X
<b>Clinical considerations</b>				
Setting	X	X	X	X
Patient selection	X	X	X	X
Ethical considerations	X	X	X	X
Cultural considerations	X	X	X	X
<b>Standard operating procedures/protocols</b>				
Patient provider identification	X			X
Emergency planning	X	X	X	X
Care coordination	X		X	X
Quality improvement/performance measures		X		X
Testing and assessment		X	X	X
<b>Technical requirements</b>				
Platforms and applications	X	X	X	X
Privacy and security	X	X	X	X
Physical location and room requirements	X	X	X	X
<b>Specific populations/settings</b>				
Children/adolescents	X	X	X	X
Forensic/correctional	X		X	
Geriatric	X		NA	X
Military and veterans	X		NA	
Substance use disorder treatment	X			X
Inpatient and residential treatment	X			X
Primary care	X			X
Rural	X			X
International		X		X
Schools			X	

AACAP=American Academy of Child and Adolescent Psychiatry; NA=not applicable; WPA=World Psychiatric Association

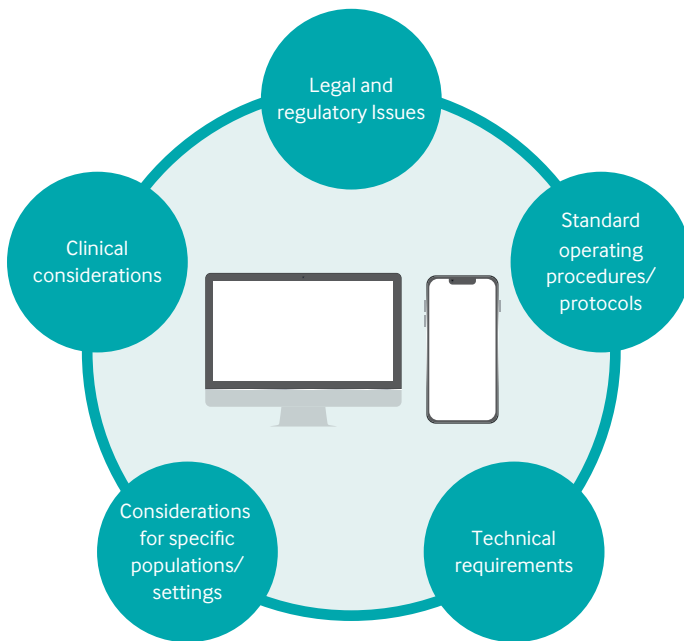


Fig 1 | Content themes from guidelines for best practices in telemental health

studies (1) use videoconferencing, (2) assess mental health conditions, and (3) use a between groups comparison design (ie, no pre/post designs without a comparator group; no wait list control designs). Of the two, Drago et al<sup>35</sup> had some additional/stricter study inclusion criteria: studies must be randomized clinical trials (RCTs), must have at least 10 patients per study arm to balance power of the analysis and limit heterogeneity, and should not be focused on mental health conditions that are a result of a medical condition. Batastini et al<sup>34</sup> required a comparison group but not an RCT design. Very little overlap of the studies is included in these two meta-analyses: among the 23 studies collectively included between them, only three were included in both.

Both meta-analyses concluded that assessments via videoconferencing yielded similar measure scores as compared with in-person assessments. They included a wide range of diagnostic populations; however, a limitation of the assessment literature is that most studies included in the meta-analyses were limited to adult populations. Additionally, in both studies, the authors described limitations of the underlying data reported in the individual studies, which led them to exclude many studies that were in the systematic reviews from the meta-analysis. Limited data reporting in the underlying studies also limited the meta-analyses authors' ability to examine important characteristics of the study methods and whether they influenced the outcomes (eg, structured versus unstructured assessments, at home versus clinic based videoconferencing settings).

### Efficacy of telemental health for treatment

#### *General mental health*

Three systematic reviews with meta-analyses examined mental health treatment broadly,

comparing whether outcomes were similar for treatment conducted via telemental health or in person. Two of these reviews<sup>34 35</sup> were described above regarding their inclusion criteria for assessment studies and these same criteria were applied for review and meta-analysis of outcomes studies. A third meta-analysis<sup>37</sup> included studies of videoconferencing or phone (ie, audio only) compared with in-person care but limited the study population to veterans. Like the assessment literature, there is little overlap of included studies among the three treatment/outcomes meta-analyses: among a total of 51 included studies, three are included in all three meta-analyses. As in the assessment meta-analyses described above, a common limitation described by the authors was the challenge of incomplete information in the underlying studies that (1) reduced the volume of underlying studies that could be included in the meta-analysis, and (2) limited the ability of the analysis to examine whether or which patient characteristics (demographic, clinical) or intervention characteristics might influence whether in-person treatment or telemental health would be differentially effective for a given patient.

Findings from two of the meta-analyses<sup>34 35</sup> indicated that videoconferencing and in-person treatment were associated with similar changes in mental health symptom reduction in general; however, one<sup>35</sup> found significant variation in the outcome based on diagnosis type, whereas the other<sup>34</sup> found that diagnostic group accounted for little variation in the meta-analytic outcome. The meta-analysis of veterans<sup>37</sup> grouped the study outcomes by "conditions," which included anger, anxiety, depression, hopelessness, pain, psychological function, quality of life, and trauma. For each of the conditions, videoconferencing was comparable with in-person treatment. Telephone interventions were compared with in-person interventions for depression and anxiety conditions, and results showed that telephone was comparable with in-person treatment for these conditions also. The exception was trauma, in which the meta-analysis indicated in-person treatment delivery was more efficacious for trauma treatment than phone delivery (small to moderate effect sizes).

Other moderators were examined in addition to diagnosis type and analyses revealed mixed findings. Sex (women tended to have better outcomes via videoconferencing than in person, whereas men had better outcomes with in-person treatment) and intervention site (patients located in "medical facilities"—defined as community medical facilities and general medical centers—had better outcomes via videoconferencing than in person) accounted for significant variation in outcomes in the Batastini et al meta-analysis.<sup>34</sup> The authors note, however, that these findings of possible differences in outcome of videoconferencing versus in-person care based on sex and site characteristics may be specific to these studies/study populations and not replicate as well across other studies. Drago et al<sup>35</sup> found significant

variation in the outcome based on the type of counseling session (structured or not), age (younger patients had better outcomes), and study quality. Batastini et al<sup>34</sup> did not limit their inclusion criteria to RCTs only and found that design type (random assignment, not random assignment, not reported) accounted for little variation in the meta-analytic outcome.

#### *Psychotherapy*

One meta-analysis<sup>36</sup> examined the evidence for working alliance in psychotherapy conducted via videoconferencing versus in-person care and its association with clinical outcomes. To be included in the review, the psychotherapy treatments were required to be either cognitive behavioral therapy or a variant. Group therapy studies were excluded. The diagnostic populations varied but did not include psychotic disorders. While the authors noted that there was strong working alliance observed in both the videoconferencing and in-person settings, the working alliance meta-analysis found that videoconferencing was inferior to in-person psychotherapy; however, in the clinical outcomes meta-analysis, symptom reduction was not inferior between the two treatment conditions. Thus, although working alliance appeared lower in videoconferencing compared with in-person care, it did not affect the outcome. The authors hypothesize this may be due to one of several considerations such as that there is discomfort caused by the delivery medium (for the patient or provider) or that therapy by videoconferencing has unique characteristics or effects (ie, other “active ingredients”) that may improve outcomes and offset the fact that working alliance was lower in the videoconferencing compared with in person. For example, it may be that patients feel more empowered in psychotherapy when patients and providers are not working in a shared space. It is worth considering that the studies included in this meta-analysis predate the pandemic (as do all the studies included in the meta-analyses of this narrative review). Therefore, the authors’ hypotheses that their working alliance results may have been related to clinicians or patients being uncomfortable with videoconferencing compared with in-person care may no longer be relevant—and bears further study—given the proliferation of telemental health since the pandemic.

#### *Family therapy*

Our search revealed one meta-analysis that examined telemental health for family therapy.<sup>38</sup> Most studies included in this meta-analysis examined child behavior symptoms and in two of them, parental depression outcomes were also examined (thus, child and parental outcomes were simultaneously assessed). Although only RCTs were included, the control groups varied in terms of in-person care, internet resources, wait list control, and treatment as usual (TAU). Less than half of included studies were in populations where the primary condition

was a mental health condition; most of the studies (five) were among children described as having non-specific “behavior problems.” In the meta-analysis of child outcomes, there was a slight advantage of telemental health over the comparison group but not a large effect size. Subgroup analyses found that the effect sizes did not differ based on the type of comparison group (ie, in person, wait list control, internet resources), nor the outcome examined. In the studies that examined parental depression, outcomes were better in the telemental health interventions compared with the comparators.

#### *Depression*

The meta-analytic literature focused on depression outcomes generally included more heterogeneous control conditions. Among the 14 studies included in Osenbach et al’s meta-analysis,<sup>39</sup> eight studies used a TAU group and six used an in-person comparison group. In addition, despite that the study populations were individuals with depression, only seven studies focused on depression as the primary outcome. Other common outcomes of focus were “general mental health” or post-traumatic stress disorder. Findings from this meta-analysis showed that telemental health was similarly efficacious as in-person care. Analyses by comparison group type found that the telemental health interventions had better outcomes compared with TAU and equivalent outcomes to in-person care. Of note, in RCTs comparing telemental health interventions with TAU, the telemental health intervention was often an “add-on” adjunctive treatment to TAU and therefore exposures to amount of treatment often differed between the two study arms. Thus, it is not surprising that telemental health appears to be more efficacious than TAU but similarly efficacious to in-person comparison groups. Moderator analyses found that studies that targeted depression showed small but significantly greater reductions in depressive symptoms compared with those that targeted another mental health condition.

#### *Postpartum depression*

Two reviews were focused on postpartum depression<sup>40 41</sup> and their inclusion criteria for meta-analysis were similar: RCTs, maternal postpartum depression severity as a primary outcome as measured by the Edinburg Postnatal Depression Scale (EPDS),<sup>44</sup> and (in contrast to other studies included in this review) a broad definition of telemental health interventions—synchronous telephone calls and asynchronous internet—and mobile phone based interventions. Both reviews had inclusion/exclusion criteria that selected for studies with participants of lower illness severity: Hanach et al<sup>40</sup> did not restrict study inclusion based on participants’ baseline EPDS score; Zhao et al<sup>41</sup> required a minimum EPDS score (> 9, which is considered on the lower end of mild<sup>45</sup>) and excluded studies with participants who had a history of mental health or substance use disorder diagnosis or treatment. Zhao et al<sup>41</sup> included nine studies in their meta-analysis and Hanach et al<sup>40</sup>

included seven studies. Despite relatively similar inclusion criteria, only three studies overlapped between the two articles. Both studies compared telemental health with TAU; thus the two study arms were not equivalent in exposure to treatment.

Hanach et al<sup>40</sup> found that telemental health interventions were efficacious in reducing postpartum depression symptoms compared with usual care. The subgroup meta-analysis on phone based intervention studies (n=3) found similar results—ie, that phone based interventions were efficacious (reducing the EPDS score by a mean of 1.18 points (95% CI -1.80 to -0.55) relative to in-person care). Notably, the telephone interventions varied although all were low intensity supportive interventions. One allowed participants to choose the mode of communication (phone, email, or app); thus not everyone received phone counseling. The seven studies reviewed were conducted across five different countries and thus there was significant variability in the content and type of usual care, as well as the providers who delivered the interventions. Zhao et al<sup>41</sup> found that telemental health interventions were more efficacious for postpartum depression symptoms than routine care (the control group). Subgroup analyses of technology type (n=6 phone studies) yielded the same results (ie, telemental health was more efficacious than the TAU control comparison group with a mean (95% CI) difference of -2.18 (-2.64 to -1.72) points on the EPDS scale). Notably, of the six telephone studies that were included, the interventions varied (three peer support, two psychotherapy, and one behavioral activation). In addition, two of the telephone studies were mixed with other technologies (website, apps). Detailed information on the TAU control conditions was not provided but the nine studies were conducted across six different countries; therefore, it is likely that routine care varied substantially. Given the non-equivalent design of the intervention and control arms of the included studies in both meta-analyses, it is not surprising that the telemental health arms would be more efficacious, although the clinical significance of one or two point reductions in EPDS scores is unclear.

### Summary of findings

The telemental health meta-analytic literature of treatment outcomes finds that telemental health is at least similarly effective as non-telemental healthcare, particularly when the comparison arms are otherwise equivalent treatment (ie, in person). There are some important nuances to this broad conclusion: telemental health's effectiveness compared with in-person care may vary based on patient characteristics (clinical or demographic) and by type of telemental health (eg, phone versus in-person care for PTSD).<sup>37</sup> The studies included in this compendium of meta-analyses cover a wide range of patient populations that vary in terms of diagnosis, age, and veteran and civilian populations; however, there are considerable limitations to this meta-analytic

literature. Our quality assessment of this literature using the AMSTAR2 ratings determined that all the articles had more than one critical flaw, indicating that confidence in the results falls in the “critically low” category. In addition to methodological flaws, there are several clinical populations or treatment modalities under-represented in this literature (eg, children/adolescents, psychotic disorders, personality disorders, group psychotherapy). There was also little examination of phone versus in-person care specifically. Although phone visits may be more accessible, there are limitations to this modality, such as lack of visual non-verbal cues and potential for distraction. It is therefore important to better understand if there is equivalence in treatment efficacy for telemental health delivered via phone (ie, audio only) versus in person and whether/what combination of phone and in-person care are similarly efficacious as in-person care.

### Guidelines

In addition to understanding the strengths and limitations of the telemental health evidence base, clinicians who are conducting telemental health, or thinking of doing so, need to consider a range of factors to ensure that they are adhering to technical and clinical best practices, as well as meeting the regulatory requirements where they and their patients are located. We reviewed the guidelines on telemental health from several of the relevant major mental health organizations including the American Psychological Association,<sup>46</sup> the American Psychiatric Association (developed in collaboration with the American Telemedicine Association (ATA)),<sup>47</sup> the World Psychiatric Association (WPA),<sup>48</sup> and the American Academy of Child and Adolescent Psychiatry (AACAP).<sup>49</sup> Several of these guidelines have been modified and updated over the years as practice and technology has changed, and future updates are likely as the landscape continues to evolve.

The American Psychological Association and the WPA's guidelines broadly include synchronous (ie, interactive video and phone conferencing) and asynchronous (eg, email, text messaging, chat via web based apps) technologies in their telepsychiatry definition, whereas the American Psychiatric Association/ATA and AACAP's guidelines focus more narrowly on synchronous interactive videoconferencing. Table 2 compares the content of the guidelines by organization. Five content themes were covered across the four organizations' guidelines (fig 1): legal and regulatory issues, clinical considerations, standard operating procedures and protocols, technical requirements, and specific populations and settings.

### Legal and regulatory issues

Topics in this theme included advising providers to be aware of laws and regulations around providing services via telehealth, with emphasis on understanding licensure requirements across

multiple jurisdictions. Prescribing providers need to also be aware of federal, state, and international guidelines around the prescription of controlled substances, which have changed in response to the covid-19 pandemic. For example, in the United States, an emergency exemption was granted to the Ryan Haight Act, which allowed providers to prescribe controlled substances via telehealth without an in-person visit. This exemption is currently temporary and set to expire when the official Public Health Emergency period ends. To help telehealth providers stay up to date on changes in regulations and policies, the Center for Connected Health Policy has a website that documents actions related to telehealth made by US federal agencies and the Centers for Medicare and Medicaid Services since the covid-19 pandemic began: <https://www.cchpca.org/covid-19-actions/>. This site also provides information regarding covid-19 telehealth policies for each of the 50 states and the District of Columbia.

Additional legal and regulatory issues covered across the four guidelines include ensuring that the standard of telemental health is equivalent to in-person treatment, the importance of obtaining informed consent, and issues around billing and reimbursement.

#### Clinical considerations

All the guidelines emphasized the importance of considering the appropriateness of patients for telemental healthcare, as well as the setting (patient setting and provider setting). Appropriateness of setting can include adequate space for privacy, access to the necessary technology, and distance to nearest emergency facility. For children and adolescents, the AACAP recommends assessing the home environment and parent/caregiver's ability to safely supervise care. Additional clinical considerations include understanding cultural and environmental factors and ensuring providers are culturally competent to deliver telemental health services. Providers also need to maintain the same level of ethical and professional standards as in-person care.

#### Standard operating procedures and protocols

All organizations' guidelines discussed the importance of emergency planning and most included guidance related to testing and assessment, as well as care coordination. Prior to engaging in a telemental health relationship with a patient, providers should develop a plan for emergencies and discuss the plan with the patient. Providers should also obtain consent from patients to communicate with the other healthcare providers involved in the patient's care.

Two of the guidelines (American Psychiatric Association/ATA and WPA) provided an outline for patient provider identification steps at the beginning of each telemental health session. This includes verifying and documenting the names of the patient and provider, and the provider's credentials; the location of the patient during the session; contact

information for provider, patient, and other relevant support people; and expectations about contact between sessions. The WPA and the American Psychological Association's guidelines further recommended collecting patient reported outcome data and patient satisfaction with telemental healthcare.

#### Technical requirements

All organizations included guidance on technical requirements. These guidelines included ensuring that videoconferencing platforms and technology based applications have appropriate verification, security, and confidentiality parameters, as well as sufficient bandwidth and resolution (for video sessions). Providers should have a backup plan for reaching the patient if the technology fails. Protections should be in place for storage and transmission of confidential patient data. Moreover, telemental health providers in the United States need to adhere to Health Insurance Portability and Accountability Act requirements.

#### Specific populations and settings

The American Psychiatric Association/ATA and the WPA guidelines included a dedicated section on conducting telemental health with special populations. The American Psychological Association embedded some of this information into other sections of their guidelines, and the AACAP included a specific section for guidance on delivering telemental health in school systems.

Two of the organizations have toolkits on their websites that include additional resources for clinicians regarding telemental health presented via a mix of videos and text:

- *American Psychiatric Association Telepsychiatry Toolkit*<sup>50</sup>—Developed by their Workgroup on Telepsychiatry, this toolkit includes information on the history and background of telepsychiatry, training resources, legal and reimbursement issues, technical considerations, and practice and clinical issues. It includes a blog page and a section devoted to child and adolescent telepsychiatry.
- *AACAP Telepsychiatry Toolkit*<sup>51</sup>—Developed in collaboration with the American Psychiatric Association, this toolkit provides information related to the background of child and adolescent telepsychiatry; legal, regulatory, and safety issues; setting up a practice; special populations; and special considerations for child and adolescent psychiatry. The AACAP's website also includes a telepsychiatry tip sheet for parents of patients diagnosed with neurodevelopmental disorders, links to covid-19 telepsychiatry resources and regulations, frequently asked questions for parents, and a link to the American Psychiatric Association/ATA's best practice guidelines.

#### Conclusion

Overall, meta-analyses support the effectiveness and efficacy of telemental health for clinical assessment



### QUESTIONS FOR FUTURE RESEARCH

- Under which circumstances or for which patient populations is telemental health similarly or more effective than in-person care?
- What is the appropriate role or balance for hybrid care (ie, care that is a mix of in-person or telemental health)?
- What is the appropriate role for phone versus videoconferencing telemental health?

and treatment purposes; however, gaps remain. For example, more research is needed to understand “Under which circumstances or for which patient populations is telemental health similarly or more effective than in-person care?” This may seem counterintuitive given the rapid adoption of telemedicine since the pandemic, particularly for mental healthcare.<sup>4-6 16</sup> However, recent evidence suggests that not all patient populations nor clinical circumstances similarly benefit from telemental health. For example, group psychotherapy may not be as amenable to telemental health compared with in-person care.<sup>52 53</sup> Additionally, some patients may benefit from a hybrid approach (a combination of in-person care and telemedicine)<sup>54-56</sup> but evidence is lacking regarding the correct balance.<sup>54 55</sup> Important next steps in telemental health research will be to address these gaps.

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