Received: 14 February 2021 | Revised: 26 March 2021 | Accepted: 27 March 2021

DOI: 10.1002/cpp.2594

RESEARCH ARTICLE

WILEY

Live psychotherapy by video versus in-person: A meta-analysis of efficacy and its relationship to types and targets of treatment

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Abstract

In-person psychotherapy (IPP) has a long and storied past, but technology advances have ushered in a new era of video-delivered psychotherapy (VDP). In this meta-analysis, pre-post changes within VDP were evaluated as were outcome differences between VDP versus IPP or other comparison groups. A literature search identified k = 56 within-group studies (N = 1681 participants) and 47 between-group studies (N = 3564). The pre-post effect size of VDP was large and highly significant, g = +0.99 95% CI [0.67–0.31]. VDP was significantly better in outcome than wait list controls (g = 0.77) but negligible in difference from IPP. Within-groups heterogeneity of effect sizes was reduced after subgrouping studies by treatment target, of which anxiety, depression, and posttraumatic stress disorder (PTSD) (each with k > 5) had effect sizes nearing 1.00. Disaggregating within-groups studies by therapy type, the effect size was 1.34 for CBT and 0.66 for non-CBT. Adjusted for possible publication bias, the overall effect size of VDP within groups was g = 0.54. In conclusion, substantial and significant improvement occurs from pre- to post-phases of VDP, this in turn differing negligibly from IPP treatment outcome. The VDP improvement is most pronounced when CBT is used, and when anxiety, depression, or PTSD are targeted, and it remains strong though attenuated by publication bias. Clinically, therapy is no less efficacious when delivered via videoconferencing than in-person, with efficacy being most pronounced in CBT for affective disorders. Live psychotherapy by video emerges not only as a popular and convenient choice but also one that is now upheld by meta-analytic evidence.

KEYWORDS
affective disorders, cognitive-behavioural therapy (CBT), face-to-face, meta-analysis, online treatment, video-delivered psychotherapy

1 | TRADITIONAL DELIVERY OF PSYCHOTHERAPY

The traditional mode for delivering psychotherapy is through a meeting of therapist and client in-person and in close physical proximity, whether in a clinical, educational, or forensic setting. This has been variously referred to as in-person psychotherapy (IPP), in vivo therapy, or face-to-face therapy, and it can be formatted for use with individuals, dyads, or groups. As Kazdin (2015) recently stated, "one-to-one in-person treatment has remained as the dominant model of delivery" (pp. 7–8). This established mode of delivery has, however, come under criticism for failing to reach many of those in need, especially in

communities with high rates of psychiatric disorders, children and elderly individuals, ethnic minority communities, those domiciled in rural areas, and those with impaired mobility (Comer & Barlow, 2014; Doraiswamy et al., 2020; Osborne et al., 2018). The lack of reach is compounded by the exceedingly small ratio of mental health professionals to population size in both low-income countries (about 2 per 100,000) and high-income countries (about 70 per 100,000) (World Health Organization, 2017). As increasingly recognized, "one-to-one in-person treatment, while useful as a model of delivery, is not very helpful as the dominant or primary model if there is going to be any palpable reduction in the burden of mental illness" (Kazdin, 2015, p. 8). Presently, the widespread and rapid emergence of social distancing, isolation, or quarantine imperatives necessitated by the COVID-19 pandemic have added significant urgency to identify and implement new ways of delivering medical and mental health services (e.g., Burgoyne & Cohn, 2020).

Key Practitioner Message

- Meta-analysis of within-groups studies (k = 56; N = 1681) reveals that video-delivered psychotherapy (VDP) is associated with substantial and significant improvement from pre- to post-phases of therapy.
- Meta-analysis of between-group studies (k = 47; N = 3564) reveals a substantial and significant advantage of VDP over wait-list controls and virtually no difference in outcome between VDP and in-person psychotherapy (IPP).
- The potential benefits of VDP are particularly promising when the target is anxiety, depression, or PTSD.
- Potential benefits of VDP are especially strong when the treatment is cognitive-behavioural therapy (CBT) though present for other therapies too.
- By preserving temporal contiguity in the absence of spatial proximity, VDP has become a viable and effective way of delivering mental health services to under-served remote populations or urban dwellers who value the convenience of therapy from home, and also during public health crises (such as the COVID-19 pandemic) that preclude in-person interactions.

2 | TECHNOLOGY-ENABLED DELIVERY OF PSYCHOTHERAPY

Accelerated development of information and communication technologies in the late 20th century has enabled new means for delivering medical and psychological services, inaugurating a new era in technology-enabled interventions (Grohol, 1999), many of which involve video. Depending on the specific technology, platform or treatment, new mental health interventions have carried various names, including digital mental health interventions (DMHIs), telemental health, telepsychotherapy, telepsychiatry, telemedicine, web counselling, remote therapy, e-therapy, mobile therapy, virtual reality exposure therapy, "serious games," and artificial intelligence therapy. In the case of video therapy, specifically, the same essential technology popularized on social media and used in corporate consulting and educational settings has been leveraged to deliver a novel psychotherapy style that has been described as "face-to-face but not in the same place" (Franklin et al., 2017, p. 116).

3 | VIDEO-DELIVERED PSYCHOTHERAPY

Psychotherapy via a secure video-link has emerged not only as a viable option for remote clients but also a popular therapy modality, particularly among busy urban residents and professionals who might otherwise have to incur the expense, lost time, and stress of commuting to see therapists in person (e.g., Bouchard et al., 2004). Video-delivered psychotherapy (VDP), as it may be termed, can conveniently link client and clinician via the internet using a camera-equipped desktop computer or other communication device such as laptop, tablet, or smartphone. Besides hardware issues, the software involved is often inexpensive or free and has become easy to operate for most users. Systematic reviews of published research have indicated that this method of delivery is feasible and accepted by diverse client populations (Backhaus et al., 2012; Jenkins-Guarnieri et al., 2015) as well as by providers (Connolly et al., 2020).

One VDP platform utilized in several studies in this meta-analysis is Skype™ (e.g., Edirippulige et al., 2013). Additional similar and increasingly popular platforms include Zoom, CoViu, VSee, FaceTime, and WhatsApp, among others detailed elsewhere (e.g., Lee et al., 2014). Combined with users' hardware (e.g., webcam, video monitor, and microphone), these enable real-time audio and video communication ("video chat"). Additionally, they allow users to transmit text and display images, documents, and so forth through "instant messaging." Voice, video, file transfers, and instant messages are encrypted to help protect privacy (Ciuca et al., 2016).

4 | RATIONALE

Much of the effort to evaluate electronically delivered psychotherapy has focused on DMHIs that are course modules originally delivered on CD-ROM then online with little or no live interaction between provider and consumer and little or no therapist support. In contrast, videoconferencing allows for "synchronous" interacting between therapist and client (Karyotaki et al., 2018, p. 82) via both visual and auditory channels. The main difference with conventional psychotherapy lies in the lack of proximity. VDP can, in fact, be described as "face-to-face." Among electronically delivered psychotherapy platforms, VDP is the closest analogue to IPP, inviting direct comparisons between the two modes.

Studies have been published in which dependent measures were obtained before and after VDP, and others have compared groups receiving either VDP or IPP. One qualitative review of 12 studies (including case reports) suggested an equivalence in symptom reduction in both VDP and IPP (de Bitencourt Machado et al., 2016). A recent meta-analysis of 12 studies of individual CBT in adults concluded that VDP was not inferior to IPP in actual reduction of target symptoms (standardized mean difference = –0.03) (Norwood et al., 2018). Other studies have provided data on video delivery of different types of psychotherapy for different disorders. However, to our knowledge, this body of evidence has not been quantitatively synthesized to answer questions about the overall or relative efficacy of VDP and how the outcome might be related to type and target of treatment.

In this meta-analysis, we evaluated efficacy in terms of effect size for the primary outcome measure in each of the 56 within-groups studies and 47 between-groups studies. It was predicted that recipients of VDP would show significant improvement from pre- to post-phases of treatment but no prediction was made about differences between VDP and IPP.

We also examined effect sizes in subgroups of studies. One such subgroup was the target of treatment. Pre-post effect sizes for VDP were disaggregated according to conditions such as anxiety, depression, posttraumatic stress disorder (PTSD), obsessive compulsive disorder (OCD), eating disorders, and other miscellaneous psychological difficulties.

Effect sizes were also disaggregated according to the type of therapy. Because of its preponderance in studies of psychotherapy, cognitive-behavioural therapy (CBT) was compared with non-CBT approaches. CBT places a premium on concrete skills that can be manualized, and therefore, the expectation was that it would be better suited to VDP than would non-CBT approaches such as experiential or psychodynamic therapy. It was hypothesized that the within-group effect sizes would be greater in CBT than non-CBT studies.

5 | METHOD

5.1 | Literature search procedures

As outlined in Figure 1, a pool of studies was identified and progressively culled according to inclusion criteria. To begin with, PsycINFO®, SCOPUS, and Google Scholar were searched for studies by using a combination of keywords appearing anywhere in the text of the document. One of the keywords in the combination had to be "Therapy" or its lexical variants (e.g., "Therapies") or synonyms (e.g., "Treatment" or "Intervention"). The other keyword in the search string had to be "video" or its variations "video-chat," "video-conferencing" or unhyphenated forms of these words. Also included were closely related terms (e.g., teletherapy, internet therapy, online therapy, web-based therapy, web-camera, and web-cam). Using these search strings and "thumbing through" reference lists of

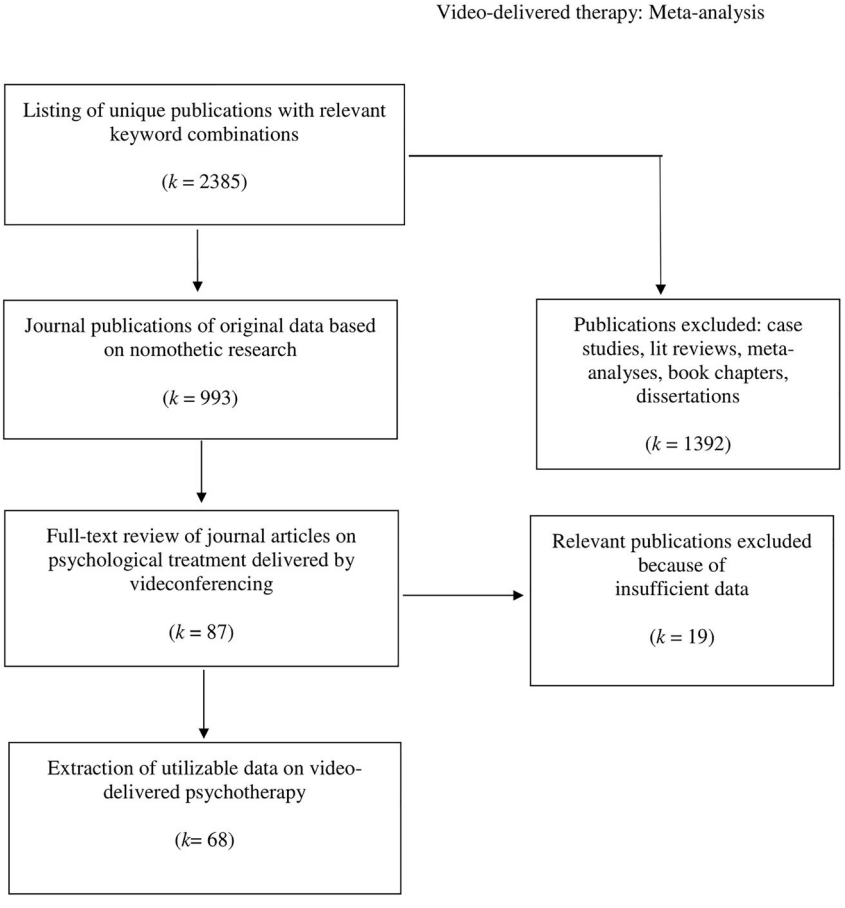

FIGURE 1 Flow chart of literature search strategy for identification of studies included in this meta-analysis

articles produced a huge number of duplicate entries from which a pool of 2385 unique articles were finally amassed. Many articles under the "online therapy" or "internet therapy" label were self-help modules consistent with DMHIs and supplemented with occasional e-mail or phone contact with the therapist; they were excluded because our central criterion was that the psychological treatment intervention had to be interactive and delivered in real time via video.

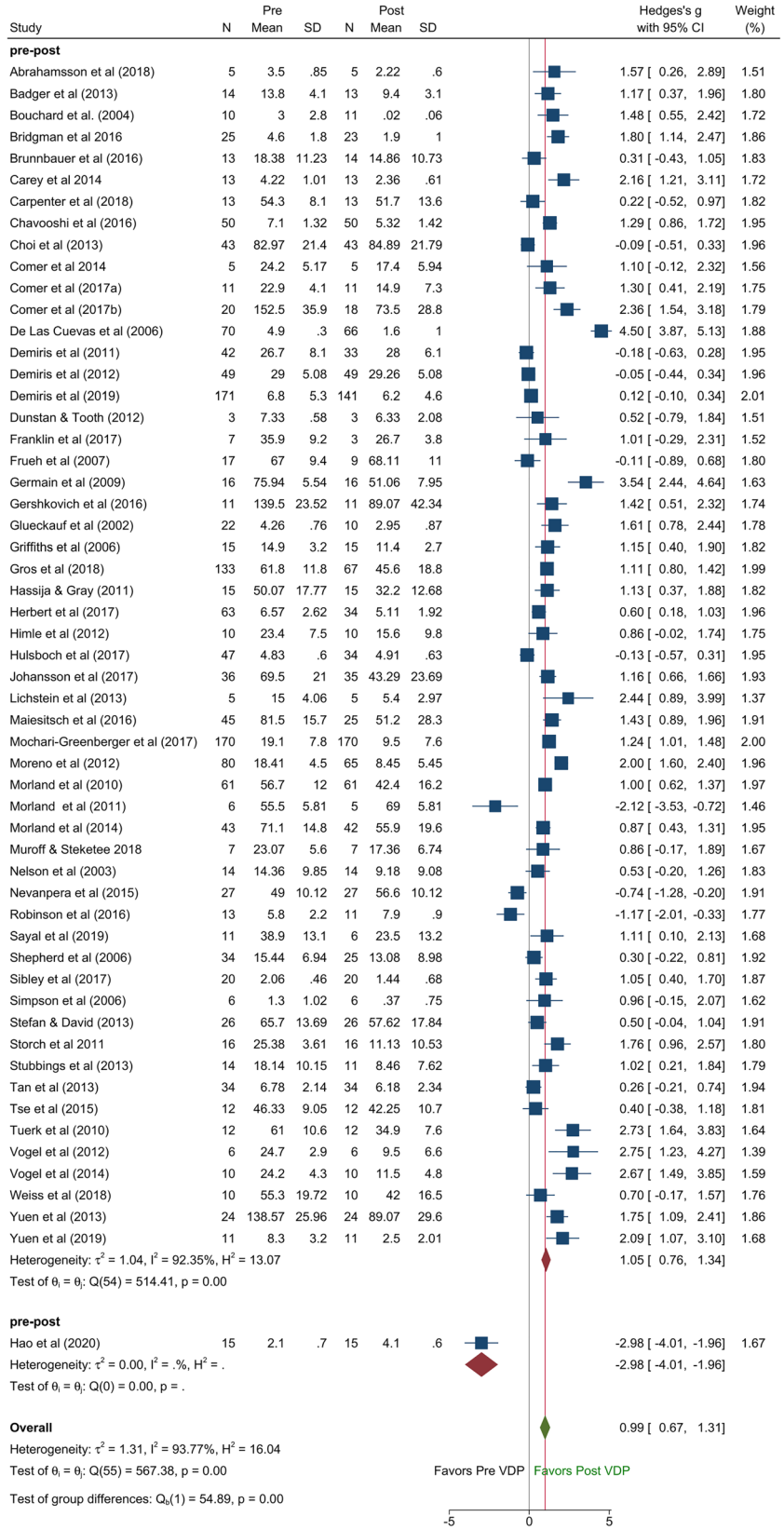

Figure 2. Within group studies

FIGURE 2 Within-groups studies [Colour figure can be viewed at wileyonlinelibrary.com]

With publication date left open, the vast majority of articles appeared this century. Most articles were in the English language. Those in other languages were excluded. Publication type was restricted to journal articles; book chapters, unpublished dissertations, theses, and conference proceedings were excluded. The remaining articles were further screened to exclude single case studies, narrative reviews, and quantitative reviews of data. This reduced the pool to 87 nomothetic studies in which psychotherapy had been delivered via videoconferencing. A final culling of articles that lacked sufficient data (e.g., means, standard deviations, or inferential statistics) reduced the final pool to 68 studies; of these, 56 provided within-groups data (Figure 2) and 47 provided between-groups data (Figure 5). Full bibliographic details of these articles are provided in the Reference.

5.2 | Data reduction and coding procedures

For each of the included studies, two members of the research team independently identified the primary presenting problem or primary outcome measure; based on terminology used in the articles and where appropriate, these measures were subsumed into broader categories (e.g., depression, anxiety, and eating disorders). Agreement was thus reached on the primary outcome measure in all but five cases; discrepancies in classification of these five were resolved by brief discussion. Similarly, therapy type was categorized according to the specific terms used in the articles (e.g., exposure therapy, problem-solving therapy, or broader categories such as CBT). All categorizations were independently extracted by two members of the research team who attained over 96% agreement. When a discrepancy was encountered, a third member of the research team was consulted to achieve consensus through discussion.

5.3 | Data analytic procedures

We conducted the analysis using Stata 16 software (StataCorp, 2019). The $k = 56$ studies had $N = 1681$ participants, and the $k = 47$ studies of VDP versus IPP/comparison group had $N = 3564$ participants. The overall population sampled was clinically diverse, with depression, anxiety, and PTSD being the most common conditions targeted for treatment. The main type of therapy offered was CBT, and the main types of non-CBT were psychodynamic therapy, psychoeducation, and counselling. All studies employed continuous outcome measures. Therefore, effect sizes were computed using means, standard deviations, and other statistical indices such as correlations, t statistic, and p values. In studies with multiple outcome measures, the primary outcome measure was selected.

A random effects model was used as we expected heterogeneity or variability of outcomes among studies. Heterogeneity was tested using the I-squared (I^2) test (Higgins & Thompson, 2002) and the Q statistic. As a rule of thumb, I^2 values of 25%, 50%, and 75% correspond to small, moderate, and large degrees of heterogeneity, respectively. Thus, higher I^2 values indicate true heterogeneity among studies, whereas values close to zero suggest that the variability in effect size estimates is due to sampling error within studies.

To explore potential sources of heterogeneity, we conducted subgroup analyses related to the target and type of therapy. Other analyses included assessment of sensitivity and the risk of publication bias, using Egger et al.'s (1997) test for funnel plot asymmetry, and the Duval and Tweedie's (2000) trim and fill procedures in Stata (StataCorp, 2019).

6 | RESULTS

In presenting the results, we begin with the $k = 56$ studies of pre-post changes within VDT. The pool is then disaggregated into subsets differing in treatment target and treatment orientation, respectively. This is followed by the results of $k = 47$ studies directly comparing VDP with IPP/comparison groups on outcome measures. Finally, results of sensitivity analysis and tests of possible publication bias are presented.

6.1 | Within-groups effects

Figure 2 summarizes results for $k = 56$ within-groups studies. As shown, the pre-post effect size of VDP was large and significant, $g = 0.99$, 95% CI [0.67–0.31]. Heterogeneity was high ($I^2 = 93.77\%$, $Q(55) = 567.38$, $p < .01$), suggesting that the extent of variability across the 56 studies might not be explained by random error alone.

Therefore, this collection of studies was disaggregated into subgroups according to (i) target of therapy and (ii) type of therapy, respectively.

As shown in Figure 3, the subgroups with $k > 5$ studies were Anxiety, Depression, and PTSD. Effect sizes were large and significant: $g = 0.99$, 95% CI [0.47–1.51] for Anxiety; $g = 1.29$, 95% CI [0.93–1.65] for Depression; and $g = 1.00$, 95% CI [0.14–1.86] for PTSD. Heterogeneity was low in the depression subgroup [$I^2 = 35.31\%$, $Q(5) = 15.97$, $p = .01$]. Of the smaller subgroups ($k < 6$), OCD had effect sizes that were large and significant, $g = 1.83$, 95% CI [1.18–2.48], and relatively homogenous, $I^2 = 44.65\%$, $Q(4) = 6.06$, $p = .19$.

Figure 4 displays within-group effect sizes according to therapy type: CBT or non-CBT. Both groups had almost the same number of studies. A large and statistically significant effect emerged for VDP within the CBT subset ($g = 1.34$, 95% CI: 0.92–1.76). The effect size for VDP within non-CBT studies was moderate and significant ($g = 0.66$, 95% CI: 0.22–1.10). Corresponding heterogeneity for each subset remained high (CBT: $I^2 = 91.30\%$; non-CBT: $I^2 = 94.19\%$).

6.2 | Between-groups effects

Figure 5 presents results for the 36 studies where VDP was directly compared with IPP. Also presented are data from smaller subsets

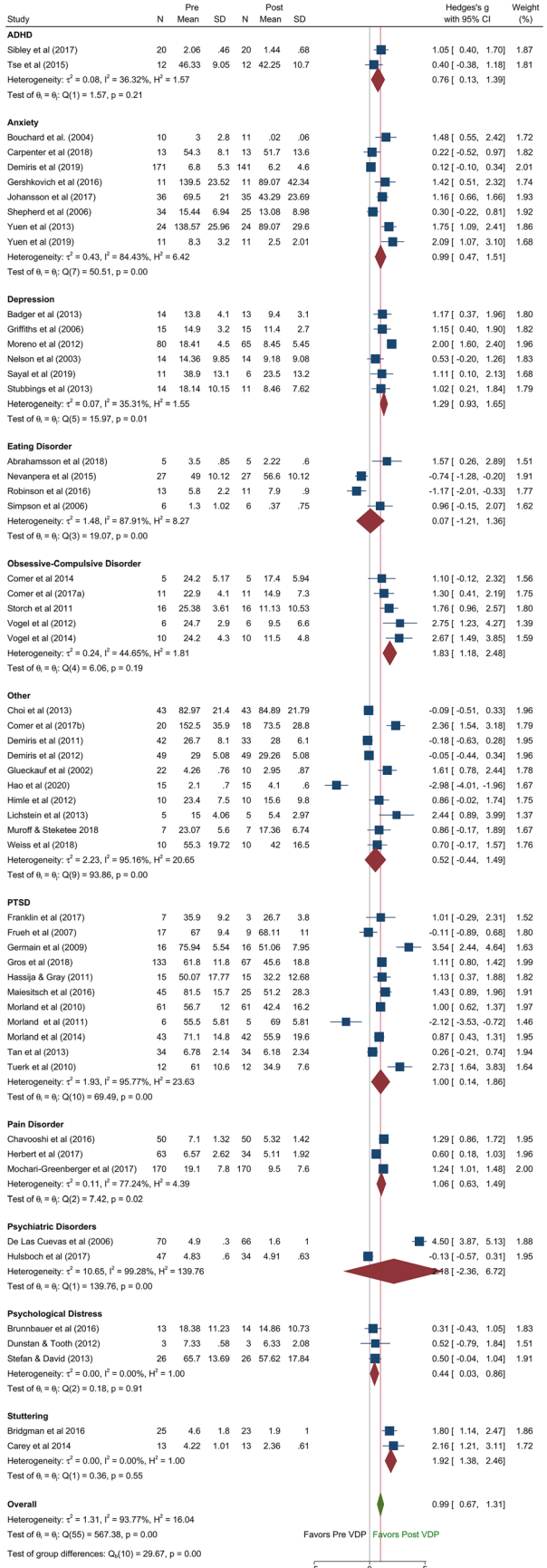

Figure 3. Within group comparison by diagnosis

FIGURE 3 Within-groups by target of treatment [Colour figure can be viewed at wileyonlinelibrary.com]

FIGURE 4 Within-groups by type of treatment [Colour figure can be viewed at wileyonlinelibrary.com]

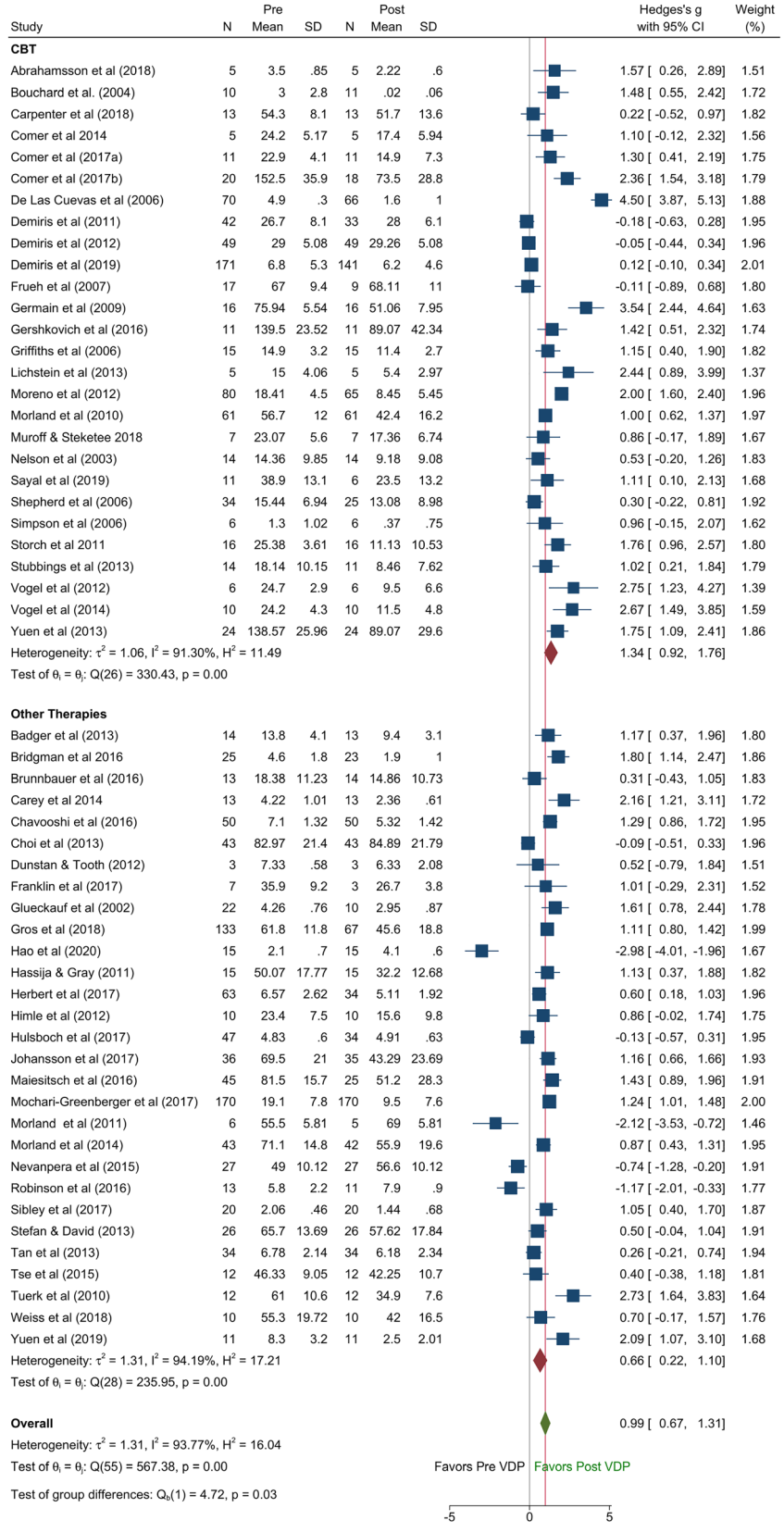

Figure 4. Within group comparison by therapy

where VDP was compared with various types of control groups. As shown, the effect size of VDP relative to IPP was near zero (g = 0.01, 95% CI: –0.23 to 0.26). Heterogeneity was high (I^2 = 88.52%, Q(35) = 202.60, p < .01). Disaggregating studies by control groups, it was found that VDP had a small effect compared with TAU or treatment as usual (g = 0.26, 95% CI: –0.34 to 0.85). Compared with wait-list

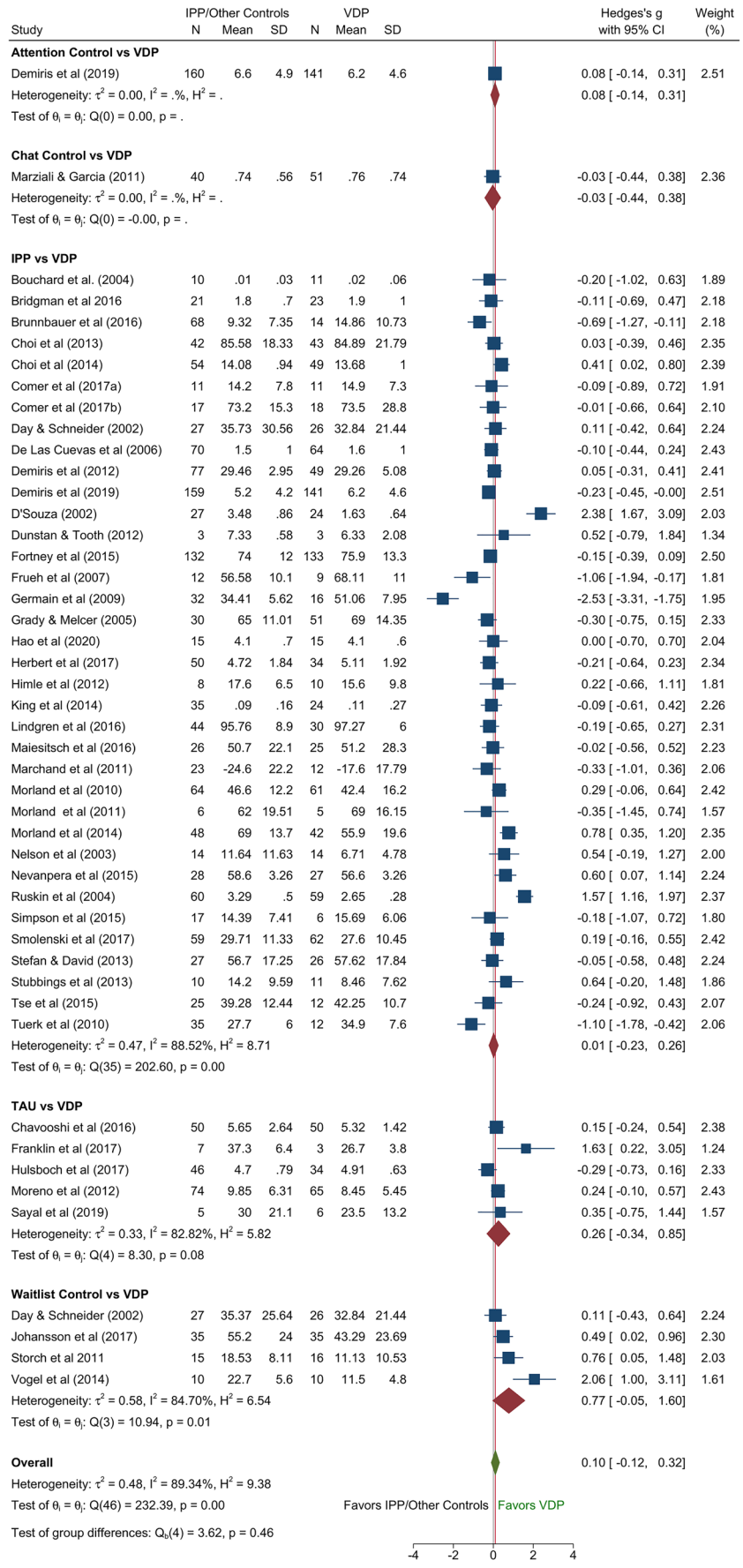

Figure 5. Between group studies

FIGURE 5 Between-groups studies [Colour figure can be viewed at wileyonlinelibrary.com]

control groups, VDP had a large and significant effect size, (g = 0.77, 95% CI: −0.05 to 1.60).

6.3 | Sensitivity analysis

A sensitivity analysis was conducted to determine whether a fixed- versus random-effects analysis led to different results. For the within-group studies (k = 56), the resulting fixed model effect size was significant (g = 0.82, 95% CI: 0.74–0.90) but lower than that for the random-effects model reported earlier (g = 0.99, 95% CI: 0.68–1.29). Heterogeneity remained high (for the fixed-effects model I^2 = 90.31%). For the between groups studies (k = 47), the fixed model effect size was (g = 0.06, 95% CI: 0.00–0.14), which did not differ by a significant margin from the random-effect model (g = 0.10, 95% CI: −0.12 to 0.32). For both within and between studies, iterative removal of each study, and its corresponding effect size as a potential outlier led to no substantial change in the overall effect size.

6.4 | Publication bias

For both within and between studies, the possibility of publication bias was examined with reference to funnel plots asymmetry (Egger et al., 1997). For the within-group studies, visual inspection of the contour-enhanced funnel plot indicated an asymmetrical distribution (Figure 6), suggesting the presence of publication bias. However, the Egger regression test indicated that this bias was not statistically significant (p = .2001). Furthermore, Duval and Tweedie's (2000) trim and fill analysis indicated that 14 studies were missing from the left side of the mean and zero studies from the right. When the missing studies were imputed, the adjusted effect size (g) was +0.54 (95% CI: 0.19–0.88), which was still statistically significant.

For the between groups studies, visual inspection of the contour-enhanced funnel plot indicated a relatively symmetrical distribution shape (Figure 7), suggesting the absence of publication bias. This was further supported by the non-significant Egger regression test (p = .4858).

7 | DISCUSSION

Given the widespread proliferation of information technology and social media, psychotherapists have increasingly turned to electronic platforms to communicate with clients. With the advent of the COVID-19 pandemic, there has been a further impetus to therapists and clients migrating to technology-mediated venues. A major technology platform for such interactions is videoconferencing. It represents the closest approximation to the gold standard of in-person therapy, having the temporal contiguity of the latter but without the spatial proximity.

Numerous empirical investigations have been published on the feasibility and outcome of VDP. In the present research, a total of 56 within-group studies and 47 between groups studies were found to be amenable to a meta-analysis of efficacy. Our primary objective was to determine the effect size for VDP pre versus post and for VDP in comparison to IPP or other control conditions. To address heterogeneity, effect sizes were further disaggregated according to target and type of therapy. Finally, sensitivity analysis was conducted and publication bias was evaluated and corrected accordingly.

Our meta-analysis of within-group studies revealed that the effect size for VDP as indexed by Hedge's g was large, g = 0.99. This was statistically significant. Checking for possible publication bias revealed that an inordinate number of missing studies would need to be added to the k = 56 dataset to render the results nonsignificant or trivial. A correction for possible bias was applied, but the overall effect size remained moderate and significant (g = 0.54). This outcome runs counter to some of the received wisdom from earlier clinician surveys that expressed doubt regarding the utility or efficacy of VDP (e.g., Mora et al., 2008; Rees & Stone, 2005), but it is consistent with

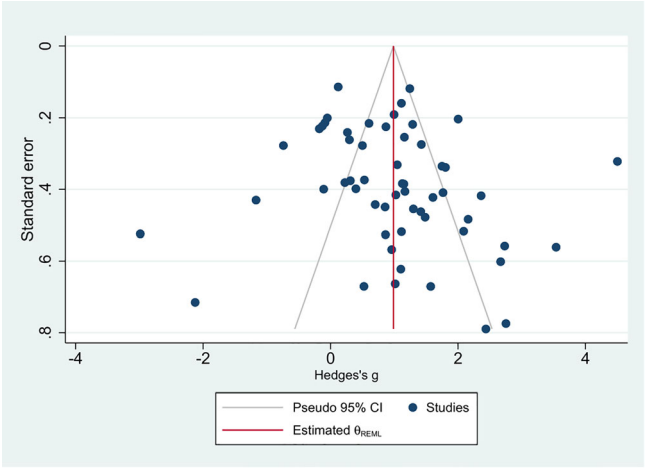

FIGURE 6 Funnel plot for within-groups studies [Colour figure can be viewed at wileyonlinelibrary.com]

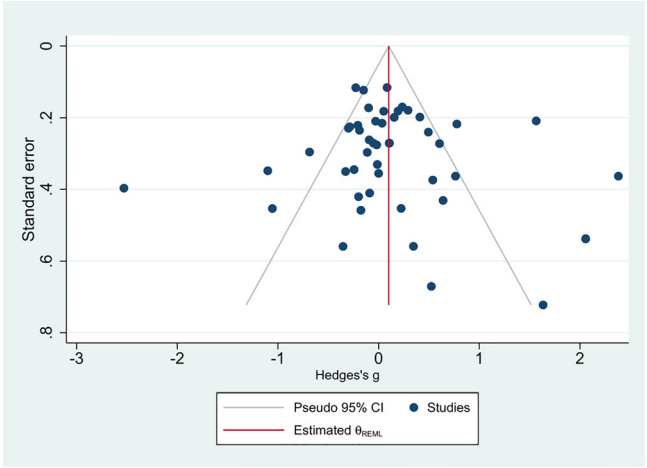

FIGURE 7 Funnel plot for between-groups studies [Colour figure can be viewed at wileyonlinelibrary.com]

more recent surveys that have shown growing confidence in VDP (e.g., Gros et al., 2013).

Heterogeneity of effect sizes was mitigated by disaggregating studies into subgroups. With regard to treatment target, the VDP advantage was particularly pronounced when the target was depression (g = 1.29), anxiety (g = 0.99), or PTSD (g = 1.00). This is unlikely to stem from any systematic difference in the type of treatment offered, because these subgroups predominantly employed CBT. It might be the case that videoconferencing is more suited to the treatment of anxiety, depression, and PTSD, where relatively concrete and systematic skills-training can be easily conveyed and rehearsed over video. It might also be that the very symptomatology of these disorders (e.g., avoidance behaviour in anxiety and PTSD, anhedonia, and psychomotor slowing in depression) make travel for in-person therapy impracticable or difficult, thus favouring VDP (Bouchard et al., 2004). Another possible explanation is that the time saved commuting to and from therapy appointments is being used to complete CBT homework, particularly in the buildup to the session or in its immediate aftermath. It is worth noting that effect sizes were lower for eating disorders (g = 0.07) and higher for OCD (g = 1.83), although each of these subgroups comprised no more than five studies. In OCD, avoidance of appointments due to contamination fears linked to clinical settings, as well as delays making it to appointments due to perfectionism or inability to leave the house before complex rituals are performed, are common problems. Therefore, positive VDP data can be seen as particularly encouraging in efforts to offer a proven OCD treatment that patients might otherwise not receive due to disease-specific obstacles.

Pre-post improvement during VDP was also more pronounced when the treatment was CBT (g = 1.34) as compared with non-CBT approaches such as psychodynamic therapy, counselling, and psychoeducation (g = 0.66); nevertheless, the effect was significant in both cases. Taken together, this suggests that therapy via video is particularly suited to CBT, specifically when applied to anxiety, depression, and PTSD. One explanation for the success of video-based CBT is that CBT, by its very nature, is often standardized, manualized, and less dependent on the dynamics of the client–therapist relationship. The therapist–client relationship may suffer across digital barriers and from the difficulty maintaining eye contact. For example, looking at the patient's facial expression on the screen as opposed to looking straight at the camera can make the therapist appear like she/he is looking down on the patient (Aboujaoude, 2018). Such subtleties in the interaction may be less consequential in an intervention like CBT, helping explain the greater effect size.

Direct comparisons between VDP and control conditions did reveal better outcomes for VDP when the comparison group was a wait-list control (g = 0.77) and treatment-as-usual (g = 0.26). However, direct comparisons of VDP with IPP led to virtually no difference in outcome.

Clinically, the present findings suggest that VDP is not only a feasible option but one that produces comparable outcomes to IPP. Compared with text-based therapy, VDP is more information-rich and even if it filters out some postural and nonverbal cues, these can be made more accessible through certain behavioural and technical adaptations (Grondin et al., 2019). Any intrinsic VDP shortcoming at the level of therapeutic process or "bonding" may be further offset by some of the ancillary conveniences and savings that make both clients and clinicians more receptive and hence more responsive to VDP (Connolly et al., 2020). One corollary is that VDP is particularly appropriate for low-risk, low-resource or underserved populations (Armfield et al., 2012), or those confined by a public health crisis such as the present one. Furthermore, as has been pointed out, ecological validity may be enhanced when clinical services are video-delivered to clients within their natural settings, and this may actually lead to an augmented sense of empathy with the patient's world (Comer & Timmons, 2019).

7.1 | Limitations

This meta-analysis strengthens the case for videoconferencing as a feasible and efficacious method of delivering psychotherapy. We have interpreted this benefit largely in terms of practical advantages linked to this mode of delivery. However, several limitations need to be acknowledged. First, only a few of the studies analysed actually asked participants about their preferred mode of therapy delivery and the reasons for their preference. Our interpretation is based on separate empirical surveys (not meta-analysed here) that reported greater preference for VDP over IPP (e.g., Connolly et al., 2020; Edirippulige et al., 2013; Jenkins-Guarnieri et al., 2015). Similarly, few of the studies we analysed actually queried therapists about their preference—another crucial determinant of the ultimate success of this new intervention.

Rather than pooling all the outcome measures from each study, the primary outcome measure was singled out for analyses. This was agreed upon by independent judgements made by the two lead authors. The role of process variables such as therapeutic alliance are a matter of speculation when interpreting the present findings. As in a prior meta-analysis of online therapy (Sucala et al., 2012), the vast majority of studies in this meta-analysis did not assess working alliance. Our interpretation that alliance was probably not vitiated during VDP stems from prior research that has reported no difference in this variable when the two modes of delivery are compared. For example, McCoy et al. (2013) concluded that there is no significant difference in working alliance or quality of the therapeutic relationship afforded by each, a finding that was also borne out in the recent meta-analysis by Norwood et al. (2018). Similarly, in the absence of relevant data from the studies analysed, we cannot be certain if other variables such as treatment adherence and treatment fidelity were better or worse in VDP compared with IPP. Attrition rates may also differ if we are to look at recent meta-analytic findings on E-therapy (e.g., Fernandez et al., 2015). Finally, the most salient findings of this meta-analysis are based on studies of CBT in anxiety, depression, and PTSD. It remains unclear how generalizable the results are to other treatment targets and therapeutic orientations. What is interesting nevertheless is that VDP has recently been attempted as a platform for delivery of various

therapeutic styles ranging from the cognitive and behavioural to psychodynamic, person-centred, and experiential therapies (Probst et al., 2021).

7.2 | Considerations for future research

After early scepticism about its efficacy, videoconferencing has been meta-analytically demonstrated to be at least noninferior to in-person delivery of psychotherapy. It is nonetheless imperative to further explicate variables driving the popularity and success of VDP, including therapeutic alliance, adherence, treatment fidelity, long-term efficacy, and the flexibility of VDP across therapy types and formats. Client and therapist preference and satisfaction with VDP should also be systematically assessed to confirm if mode of delivery is indeed a contributing factor to therapeutic outcome.

Further, there is no reason why regular sessions of VDP could not be combined with occasional IPP sessions. One version may involve starting to work with new patients in an IPP mode to establish rapport and then moving to VDP. Such a hybrid model may be especially suited to clients who have a predilection for the "formality" of meeting in a clinical setting but who, for reasons of distance, cost, or time, simply find it more practical to receive care remotely. Through such pairing, VDP may operate as a conditioned stimulus within a process of reinforcement of the therapeutic alliance fostered by IPP. Another strategy may be to deploy VDP as part of a stepped care plan, that is, attempt VDP but "escalate" to IPP if a patient does not respond or for diagnostically or behaviourally more challenging cases. It has been further suggested that synchronous delivery of psychotherapy (via video or in-person) can be combined with asynchronous methods such as email or text messaging (Smith et al., 2017). Also, given the number of patients who are both on psychotropic medications and in psychotherapy, studying how psychopharmacology in person or over video might interface with VDP would seem like an important priority.

Videoconferencing technology is now commonplace, and the studies meta-analysed here reflect how it has been adapted for delivering psychotherapy remotely and across geographic obstacles (one caveat being that licensing laws still complicate cross-border delivery in many instances). Its continued evolution as an alternative or supplement to traditional in-person therapy will arguably depend on factors that touch on ethics, law, public health, and economics. Many pros and cons continue to stimulate discussion (e.g., Stoll et al., 2020). Particular concerns continue to be voiced regarding the need to ensure and maintain privacy (Aboujaoude, 2019). Privacy can be breached as a result of unauthorized access to client information (i.e., inadequate security), in the transmission of client information (e.g., human error when sending an email), or when a client or therapist is unexpectedly interrupted during a session (Bolton, 2017; Kanani & Regehr, 2003). This highlights the need for therapists to adopt a range of security measures such as the use of encryption software, firewalls, and passwords, as well as steps to ensure that therapists follow ethical guidelines regarding the storage of clinical data (Aboujaoude, 2019). Nearly 20 years ago, Childress (2000) discussed how therapists have a responsibility to inform clients about the potential risks of receiving internet-based services, to consider their own competency to deliver services (and the source of this competency in their background and training), and to adhere to relevant professional guidelines. Today, ethical guidelines for E-therapy have been promulgated by the American Psychological Association (see APA, 2013) as have tips for advertising, billing, and disclosure of services (Ragusea & VandeCreek, 2003) and a whole handbook of career prospects in this field (Maheu et al., 2017).

There is an overarching responsibility for clinical practice to be compliant with the regulations and licensing requirements that apply to the jurisdictions in which it takes place. Degree and certification programmes are becoming particularly important for mental health professionals who wish to deliver specialty care via videoconferencing and online. In many countries, insurance reimbursement models are already being formulated for internet-driven delivery of a wide range of medical and psychological services, as are rules and policies for the protection of both clients and clinicians. A recent review of telepsychiatry in several countries, including Finland, Australia, India, the United Kingdom, the United States, and South Africa clearly illustrates how different models of VDP and related methods of delivering mental health services have emerged (Naskar et al., 2017), arguing for a consolidated model for teletherapy (McCord et al., 2020). In the wake of the COVID-19 pandemic, there is newfound appreciation for the value of VDP and how it can allow the continued delivery of care to a suddenly confined population (McBeath et al., 2020; Simpson et al., 2020). As technological advances, enhanced acceptability, public health needs, and economic imperatives continue to increase the popularity of VDP, up-to-date protocols and policies rooted in research evidence are needed now more than ever.

ACKNOWLEDGMENTS

The authors would like to thank Cheyenne Kulhanek, Anna (Sabrina) Barrios, and Shamsheer Sanghera for assistance in literature searches and data extraction. This study was supported in part by a Grant for Research Advancement and Transformation awarded to Dr. Fernandez from the Office of the Vice President for Research, Economic Development, and Knowledge Enterprise at the University of Texas at San Antonio. Appreciation is also expressed to Mr. K. Madhavan for therapeutic exchange online and in-person.

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How to cite this article: Fernandez E, Woldgabreal Y, Day A, Pham T, Gleich B, Aboujaoude E. Live psychotherapy by video versus in-person: A meta-analysis of efficacy and its relationship to types and targets of treatment. *Clin Psychol Psychother*. 2021;1–15. https://doi.org/10.1002/cpp.2594