

Remote digital delivery of real-time psychotherapy compared with face-to-face therapy for depression or anxiety (including post-traumatic stress disorder)

What were we asked to look at?

NHS Education for Scotland (NES) asked us to review the published evidence on the effectiveness of remote digital psychotherapy for adult patients with depression or anxiety (including post-traumatic stress disorder), compared with face-to-face therapy. Remote digital psychotherapy can be delivered via telephone, the internet, video, or online messaging. Our assessment included whether clinical staff can build an effective therapeutic relationship with clients during psychotherapy via digital media. We also assessed the literature relating to patient satisfaction and acceptability of remote digital delivery of psychotherapy.

Why is this important?

This report will support an update of the [NES matrix of psychological therapies](#) that are commissioned in NHSScotland. Depression and anxiety disorders are common and it is likely that there have been rapid advances in interactive technologies and changes in digital skills in society since the NES matrix was last published in 2015.

What was our approach?

Given the short timescales for this work an abbreviated SHTG Assessment was undertaken. Only limited critical appraisal was possible and this work did not undergo peer review.

What next?

This assessment will inform a comprehensive review process around delivery and demand for psychological therapies which is being undertaken by NES.

Key findings

Effectiveness and safety

- The evidence relating to the clinical effectiveness of remote digital delivery of psychotherapies consisted of five systematic reviews, two of which incorporated meta-analyses. Cognitive behaviour therapy (CBT) was the most common psychotherapy modality reported in the literature. Only one review discussed patient safety.
- There was overlap in the studies that were included in the systematic reviews. The small number of robust comparative primary studies included in the reviews, and the heterogeneity across participant groups and outcome measures, leads to low confidence in the quality of the evidence.
- Key points are presented below by psychological condition:

Anxiety

- A systematic review including seven comparative studies in patients with a range of diagnoses found no statistically significant differences in anxiety measures between videoconferencing psychotherapy (VCP) and face-to-face therapy (FTFT).

Post-traumatic stress disorder (PTSD)

- One well-conducted meta-analysis based on seven studies found that, when compared with FTFT, videoconference therapy did not result in statistically significantly different PTSD outcomes post-treatment, but led to inferior outcomes at 3-6 months follow up.
- A systematic review discussed patient safety and noted that a cautious approach should be taken when conducting exposure tasks via tele-therapy in the PTSD population due to the potential effects of high levels of emotional arousal.

Depression

- A high quality systematic review with meta-analysis reported that, compared with FTFT, telephone-administered CBT was not statistically significantly different in its effectiveness in reducing depressive symptoms.

- A systematic review included 14 controlled studies comparing the effects of VCP and FTFT on depressive symptoms, and found no statistically significant differences between the delivery methods.

Therapeutic alliance

- A narrative systematic review reported the therapeutic alliance developed between patient and therapist during VCP to be non-inferior to FTFT, for people with anxiety disorders, depression, or PTSD. In an associated meta-analysis of five trials in patients with mixed mental health conditions, therapeutic alliance in VCP was found to be inferior to FTFT.
- In one primary study, people with generalised anxiety disorder who underwent VCP rated the therapeutic alliance significantly higher compared with patients who underwent FTFT.

Patient and social aspects

Acceptability

- Based on seven randomised controlled trials (RCTs) within a systematic review, the weighted average percentage of completed sessions of telephone-administered psychotherapy for depression was 73% (range 37% to 86%).
- A network meta-analysis (NMA) did not find any statistically significant differences in acceptability/drop-out risk between telephone-administered CBT and individual or group therapy for depression.
- Evidence from two primary studies conducted in military veteran populations showed that although the retention rate between FTFT and VCP for treating PTSD may not be significantly different, patients undergoing VCP drop out earlier in the programme compared to FTFT.

Acceptability: provider attitudes

- One systematic review of 38 studies found that providers' attitudes to using VCP were largely positive, with providers describing it as an important and acceptable mode of treatment delivery. Important negative attributes included concern around patient acceptability and safety.

Satisfaction

- Across seven RCTs, a systematic review found no statistically significant differences in satisfaction when comparing VCP with FTFT for treatment of depression. High levels of patient and provider satisfaction with VCP were frequently reported.
- A primary study (n=115) found no significant effects of treatment modality (video tele-health versus FTFT) on any measure of perception of service quality or satisfaction in patients treated for PTSD.

Cost effectiveness

- No systematic reviews of economic evidence on remote digital delivery of psychotherapy were identified.

Contents

Research question	6
Literature search	7
Clinical effectiveness and safety	7
Anxiety	7
Post-traumatic stress disorder (PTSD)	8
Depression.....	9
Therapeutic alliance	10
Mixed mental health disorders	10
Anxiety	11
Patient and social aspects.....	11
Acceptability.....	11
Depression.....	12
PTSD	13
Acceptability: provider attitudes	14
Satisfaction	16
Depression.....	16
PTSD	17
Cost effectiveness	17
Conclusion	18
References.....	20
Appendix 1: Abbreviations.....	21

Research question

The parameters of the research question are outlined in table 1.

Table 1: parameters of the research question

Patients	Diagnosed with depression and/or anxiety disorders Depression: include major depressive disorder (MDD), recurrent, chronic and persistent (old/new terms), dysthymia. Anxiety: generalised anxiety disorder, panic disorder, agoraphobia, social anxiety disorder, specific phobias, obsessive compulsive disorder (OCD), post-traumatic stress disorder (PTSD) and health anxiety
Intervention	Psychological therapy delivered by a clinician remotely (distance-delivered) via digital media such as videoconference, telephone or by synchronous messaging
Comparators	Face-to-face individual or group interventions
Outcomes	Any validated measures related to the diagnoses for example Patient Health Questionnaire (PHQ9), Hospital Anxiety and Depression Scale (HADS), General Anxiety Disorder-7 (GAD7), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI)
Study methodologies	Systematic reviews Meta-analyses

Literature search

A systematic search of the secondary and primary literature was carried out between 15 September 2020 and 24 September 2020 to identify systematic reviews, health technology assessments and other evidence based reports. Medline, Embase, PsycInfo and Web of Science Core Collection databases were searched. Results were limited to English language and 2015 onwards.

Key websites were searched for guidelines, policy documents, clinical summaries, economic studies and patient issues material. Concepts used in all searches included: remote, digital, online, internet, telephone, mobile, technology, telemedicine, telehealth/depression, anxiety, post-traumatic stress disorder (PTSD), obsessive compulsive disorder (OCD), trauma, panic/therapy, therapies. A full list of resources searched and terms used are available on request.

Health technology description

Remote/distance delivery of psychological therapies involves using videoconferencing, internet, telephone or messaging such as by email, to deliver therapies which would more traditionally be offered in a face to face manner. Therapists and clients are generally not in the same location. Such approaches may be described as telehealth, telemedicine or e-health in the literature.

Clinical effectiveness and safety

The evidence for the effectiveness and safety of remote digitally delivered psychotherapy consisted of five systematic reviews,¹⁻⁵ two of which reported meta-analyses.^{3, 4}

Anxiety

One systematic review explored the efficacy of videoconference psychotherapy (VCP) for the treatment of anxiety disorders compared with face-to-face therapy (FTFT).² Participants' diagnoses included panic disorder with and without agoraphobia, generalised anxiety disorder, social anxiety disorder, social phobia and hypochondriasis. The most commonly evaluated psychotherapy modality was cognitive behavioural therapy (CBT) (12/21 studies) followed by behavioural activation (BA) (3/21). Other modalities included in the review were problem-solving therapy (PST), prolonged exposure (PE) therapy, acceptance-based behavioural therapy, metacognitive therapy, a proprietary intervention, and a mixture of modalities. Outcomes included the Beck Anxiety Inventory (BAI) and the Depression Anxiety Stress Scales (DASS).

Seven studies included in the review compared the effectiveness of VCP and FTFT. Five of the studies were small ($n \leq 50$) RCTs that focussed on PTSD or mood disorders with anxiety measures as secondary outcomes. Two studies were quasi-experimental, non-randomised cohort studies. None of the studies identified a statistically significant difference in outcomes between the modes of delivery. One of the comparative cohort studies ($n=21$) in patients with panic disorder with agoraphobia reported that panic frequency was reduced in the VCP group compared with the FTFT group. Important limitations of the systematic review include the wide heterogeneity of outcomes and study methodologies, and that anxiety measures were frequently a secondary outcome in the studies.

Post-traumatic stress disorder

A well-conducted systematic review and meta-analysis evaluated the effectiveness of distance-delivered interventions (most of which were grounded in CBT principles) for the treatment of adult patients with a primary diagnosis of PTSD.⁴ Outcomes included PTSD symptoms and associated depression symptoms. For PTSD symptoms the most frequently used measure was the self-report PTSD checklist (civilian and military versions), and for depressive symptoms the self-report BDI was the most commonly used. Seven studies ($n=703$) compared distance-delivered psychotherapy with FTFT. The findings of meta-analysis of these studies are summarised in table 2. Compared with FTFT, distance-delivered psychotherapy did not result in significantly different PTSD outcomes post-treatment, but led to inferior outcomes at 3-6 months follow-up. For depression symptoms, distance-delivered psychotherapy was not as effective as FTFT. The superiority of FTFT was not maintained at 3-6 month follow-up.

Sensitivity analyses revealed that the comparisons of distance-delivered psychotherapy with FTFT at 3-6 month follow-up for depression outcomes were heavily influenced by a large effect size from the largest trial in the analysis. The effect size in this trial was not calculated in the same manner as the effect sizes calculated by the systematic review investigators. The findings for follow-up in the meta-analysis should be interpreted with caution.

Table 2: comparison of distance-delivered psychotherapy for adults with PTSD⁴

Outcome	Control group	n patients (n studies)	Mean between group effect (intervention vs. control)	95% confidence interval (CI)
PTSD symptoms	Face-to-face therapy post-treatment	703 (7)	-0.05	-0.31 to 0.20
	Face-to-face therapy	611 (5)	-0.25	-0.44 to -0.07

	3-6 month follow-up			
Depression symptoms	Face-to-face therapy post-treatment	452 (5)	-0.22	-0.31 to -0.14
	Face-to-face therapy 3-6 month follow-up	320 (3)	0.27	-0.82 to 1.37

A second systematic review included 12 studies (out of a total of 41) that looked at the clinical effectiveness of tele-therapy interventions including video conferencing, telephone consultations and online self-help materials.⁵ The majority of the studies overlapped with the previous meta-analysis.⁴ In order to reduce PTSD symptoms compared with FTFT - using what the authors describe as non-inferiority analyses - psychotherapy modalities included prolonged exposure therapy, cognitive processing therapy (CPT), CBT, BA, eye-movement desensitisation and reprocessing (EMDR), anger management, mindfulness, and general coping and psycho-education interventions. Nine of the studies concluded that tele-therapy was as effective as FTFT. Two studies found FTFT to be more effective than tele-therapy, but neither study used randomisation to assign participants to treatment groups. No studies found any significant differences in satisfaction or acceptability between tele-therapy and in-person treatment groups, with most reporting high levels of satisfaction with both. The major limitations of the systematic review were the heterogeneity of included studies and the lack of transparency in reporting the design of the individual studies.

Four studies included in the systematic review discussed issues relating either to managing suicidality or more general patient safety in the context of arousing high levels of emotion in trauma-focused therapies, for example during exposure tasks. Three studies reported that there were no significant difficulties in using tele-therapy to manage patient anxiety in exposure-based interventions. One of the three studies, while not finding statistically significant differences, did report a trend for participants having concerns about managing their emotions during exposure tasks when using tele-therapy, for example, being concerned about losing control. The authors of this primary study suggested that it might be prudent to proceed cautiously when doing exposure tasks in tele-therapy interventions.

Depression

A high-quality systematic review and meta-analysis examined the impact of telephone-administered CBT on depressive symptoms compared with control or active treatments.³ Compared with face-to-face psychotherapy (four trials) or another active comparator (two trials), small and non-significant beneficial effects of telephone-administered CBT were observed (standardised mean difference (SMD) in effect size 0.18, 95% confidence interval (CI) -0.45 to 0.09, $p=0.026$, $I^2=60.6\%$). A sensitivity analysis removing two potential outliers

showed a significantly larger impact on depressive symptoms favouring telephone-administered CBT (SMD = -0.39, 95% CI -0.58 to -0.21, $I^2 = 0\%$). Most of the trials included in the review presented a high risk of bias related to the “measurement of the outcome domain” and “bias in selection of the reported result” according to the Cochrane risk of bias tool.

A systematic review of 14 RCTs, four quasi-experimental studies and 15 uncontrolled studies, evaluated the efficacy and effectiveness of VCP for the treatment of depression.¹ Outcomes included BDI and the Hamilton Depression Scale (HAM-D). The majority of controlled studies reported inconclusive results or no statistically significant differences between VCP and FTFT groups receiving the same therapy modality. One study found that the VCP group showed significant reductions in depressive symptoms at follow-up. Participants in this study were older adults (mean age = 64.8). One randomised study found that the FTFT group showed greater reductions in depressive symptoms post-test, although no differences were identified at follow-up. This study focused on military veterans in a rural setting. For many of the included studies depressive symptoms were not the primary outcome.

Therapeutic alliance

The evidence on developing a therapeutic/working alliance during remote psychotherapy (via digital media) all related to video-based therapy and consisted of a systematic review with meta-analysis and a primary study.^{6,7} The interpretation of findings from studies assessing therapeutic alliance should acknowledge a tendency for higher correlation between therapeutic alliance and clinical outcomes if both are rated by the same person (halo effect), and for confounding by symptom changes that lead to patients scoring therapeutic benefit instead of the therapeutic alliance.⁶

Mixed mental health disorders

The systematic review with meta-analysis assessed the development of the working alliance in patients undergoing CBT via videoconferencing compared with FTFT.⁶ The systematic review incorporated all study designs, including non-comparative studies, and did not limit by patient population (studies in the analysis were not limited to depression and anxiety). Data from ten primary studies were included in a narrative systematic review and five RCTs were combined in a meta-analysis. Study quality was assessed using bespoke criteria based on multiple appraisal checklists. Only two included studies met all 12 of the quality criterion.

Eight studies related to relevant patient populations: people with anxiety disorders, depression, or PTSD. Six studies had a face-to-face comparator group. All ten studies used the Working Alliance Inventory (WAI) or WAI-short form (WAI-SF) questionnaires to measure therapeutic alliance. Five studies only asked clients to assess the working alliance,

whilst four studies asked both the therapist and the client to complete the relevant WAI (there are client and therapist versions of this tool). Included studies were published between 1998 and 2015, therefore a wide range of underlying video technologies were used. Six studies reported patients received their videoconference sessions in a clinic or office setting. Only one study reported patients receiving VCP from home, which reduces the external validity of the results because normal clinical practice would be for patients to engage with VCP from home.

In the narrative systematic review, all ten primary studies reported a strong therapeutic alliance in the VCP group. Four out of six comparative studies found the therapeutic alliance developed in VCP to be non-inferior to FTFT. In the meta-analysis of five RCTs in patients with mixed mental health conditions however, the therapeutic alliance in VCP was found to be inferior to FTFT. This result was robust to sensitivity analyses that removed low quality studies. It is unclear from the meta-analysis report whether the amalgamated WAI scores used in the analysis were WAI scores from both patients and therapists. If this is the case, it may explain why the meta-analysis found the therapeutic alliance in VCP inferior, while four out of six studies in the narrative systematic review found it to be non-inferior.

Anxiety

A primary study in patients with generalised anxiety disorder compared tele-psychotherapy via videoconference with face-to-face CBT.⁷ Patients in the videoconference group attended a local clinic where they video-conferenced with a therapist based at a different site. Therapy consisted of 15 one-hour sessions. The WAI-client and WAI-therapist questionnaires were used to assess the working alliance after sessions one, three, five, nine, 11, 13 and 15. One hundred and fifteen patients were randomly assigned to VCP (n=50) or FTFT (n=65). Demographics were similar across the two patient groups with a mean age of 41.5, 82.6% were female, and all were white. Results indicated that a strong working alliance formed in both the VCP and FTFT groups. Clients rated the working alliance significantly higher in the VCP group compared with the FTFT group, $p=0.007$. Clients were said to have rated the working alliance significantly higher than therapists, although on closer examination this applied only to the videoconference group ($p<0.001$). There were no significant differences in the therapists rating of working alliance between treatment groups.

Patient and social aspects

Acceptability

The evidence base for acceptability of psychotherapies delivered remotely via digital media compared with FTFT consisted of a systematic review, a network meta-analysis, and two

primary studies.^{3, 8-10} No studies were identified that included patients with anxiety disorders. The studies variously looked at attrition rates, treatment adherence or retention, and acceptability of remote digital delivery. Interpretation of the results of these studies should take into consideration potential confounders of drop-out from psychotherapy including age, ethnicity, education level, and socioeconomic status.¹¹ It is unclear from the evidence identified whether adjustments have been made for these confounding factors within the analyses.

Depression

A systematic review and an NMA reported on the effectiveness of remote digital delivery of psychotherapies for treatment of depression.^{3, 9}

The systematic review reported adherence to telephone-administered psychotherapy for severe depression, or moderate-to-severe depressive symptoms as a secondary outcome.³ The primary effectiveness outcomes from this review are described in the clinical effectiveness and safety section of this document. Adherence to treatment was used as a measure of acceptability of telephone-delivered therapy. Adherence to the comparator interventions, control condition, or active comparator, was not reported. Seven of the included RCTs reported adherence to telephone-administered CBT (n=500). The weighted average percentage of completed sessions was 73% (range 37% to 86%). In five studies, the percentage of patients completing all sessions ranged from 68% to 85%. In three studies 10%, 12% and 14% of patients did not start the intervention. Limitations of this review include small sample sizes in some studies (one study had only seven patients in each arm) and the possibility that depression severity may be an outcome moderator.

The NMA compared acceptability of several modalities of delivering CBT to adult patients with depression.⁹ Studies included in the NMA either incorporated patients meeting clinical criteria for a depressive disorder (78 studies) or patients who scored above a cut-off on a self-reported score (77 studies). Eleven studies were in women with post-natal depression. Studies selected for inclusion in the NMA either compared treatment modalities or compared a treatment modality with a control condition. The relevant comparisons for this assessment were telephone-based CBT compared with individual or group face-to-face CBT. Acceptability was defined in the NMA as drop-out from therapy for any reason during the acute-phase treatment.

The NMA appears to have been well conducted. The published report includes methods for examining the transitivity assumption (effect modifiers equally distributed across comparisons), checking consistency, and measuring goodness of model fit. The authors also present a network plot, use multivariate analyses to investigate sources of heterogeneity, and rank interventions using the surface under the cumulative ranking curve (SUCRA). Of

the 155 included RCTs, 57 were on individual FTFT, 45 on group therapy, and ten on telephone-administered therapy.

Owing to the small number of studies assessing telephone-administered CBT, this intervention was not well connected to the network, with few studies reporting relevant comparisons (four comparing telephone with individual therapy, all of which were included in Castro *et al*, 2020³). This may affect the robustness of the results for this intervention as greater emphasis is placed on indirect evidence. There were no statistically significant differences in acceptability/drop-out risk between telephone-administered CBT and individual or group therapy: relative risk (RR) 0.97 (95% CI 0.71 to 1.33) and RR 0.93 (95% CI 0.64 to 1.35) respectively. In SUCRA ranking of the acceptability of different delivery formats, telephone-administered therapy ranked highest (67.7%), followed by individual therapy (62.5%) and group therapy (51.8%). This suggests that drop-out rates for telephone-administered CBT are the lowest among the interventions assessed.

PTSD

The evidence on the acceptability of psychotherapy delivered using remote digital media in patients with PTSD came from two primary studies, both conducted in military veteran populations.^{8, 10}

The first study assessed treatment retention among veterans suffering from PTSD due to military sexual trauma, who represent a group of patients with higher therapy drop-out than veterans with PTSD due to other traumatic events.¹⁰ Treatment delivered by video technology (real-time remote therapy) was compared with individual FTFT. Patients could choose which format they wished to receive therapy and whether they wanted to undergo PE therapy or CPT. The study assessed treatment retention for both the full treatment programme (12 sessions or until symptoms resolved if sooner) and for minimally adequate care (8 sessions).

Of 171 veterans recruited to the study, 31 opted to undergo treatment via video. Participants had a mean age of 44.4 (standard deviation (SD) 11.6) and 73.5% were women. 46.8% of patients completed a full programme of PTSD therapy. The retention rate was not significantly different between the face-to-face (50%) and video-based (32.3%) interventions, $p=0.073$. Patients dropped out of the video-delivered therapy significantly earlier in the programme compared with the face-to-face group ($p=0.043$). In face-to-face therapy, 50% drop-out occurred between sessions 11 and 12, whereas for video-based therapy it occurred between sessions five and six. 58.5% of patients completed minimally adequate care. Significantly more patients in the FTFT group (62.1%) completed the minimally adequate care sessions compared with the video-based group (41.9%), $p=0.039$. The reasons for drop-out were not explored in this study, and study results may not generalise to men or civilians.

The second study was a qualitative study exploring UK veteran experiences of CPT for PTSD delivered via Skype.⁸ This study was conducted by a military charity specialising in treatment of PTSD. Participants were veterans who had left military service at least one year prior to therapy and had completed treatment at least one week prior to interview. Of the 16 participants interviewed, only one had dropped out of therapy prior to completion. Fifteen of the participants were male, all but one were white, and the mean age was 41 (range 27 to 58). The authors identified five key themes:

- Effect of your own environment – while therapy via Skype helped patients feel more relaxed, less anxious, and more engaged in therapy, there were negative aspects too. Patients reported missing out on support between sessions, being lonely or isolated between sessions*, and being jolted back into their normal life when the session ended.
- Importance of therapeutic alliance – views on therapeutic alliance varied from positive views about seeing the therapists face and building trust/rapport, to the negative among patients who found it impersonal and difficult to read body language via Skype.
- Technicalities and practicalities – this theme revolved around the flexibility of Skype in terms of location and timing, the reduced impact on daily life, and some problems with the technology, such as a poor connection.
- Personal accountability – patients needed to take responsibility for their engagement with the therapy, find a private space for their sessions, and manage their time.
- Measuring change – Skype seemed to help overcome negative previous experiences of therapy and enable patients to recognise and understand their experiences.

The findings of this study may not generalise to civilians, women, or people from different cultural backgrounds.

**An alternative provided for this group of veterans was a residential programme provided by the military.*

Acceptability: provider attitudes

One systematic review explored provider attitudes towards, and experiences of, using videoconferencing to delivery real-time patient care.¹² The data extracted from the primary studies was analysed using the unified theory of acceptance and use of technology (UTAUT). The UTAUT framework consists of four constructs: performance expectancy (usefulness and relative advantages), effort expectancy (ease of use), social influence (desirability within organisation) and facilitating conditions (infrastructure to support implementation). The systematic review authors assigned themes they termed sub-constructs within each of the UTAUT constructs. Quality of included studies was assessed using the Cochrane risk of bias tool. There was risk of bias in all domains of the Cochrane tool for many of the included studies, particularly selection bias.

The review included 38 studies, 28 assessed provider attitudes to specific modalities of videoconferencing psychotherapy, and ten that were general surveys of psychotherapy provider attitudes. Seventeen studies included only providers with experience of using videoconferencing, two studies focused on providers with no experience, and 19 studies included both. Provision of psychotherapies via videoconferencing was the focus of 22 studies. Only five studies assessed use of videoconferencing in patient homes rather than in a clinic setting. Fifteen studies involved treatment of children or adolescents, ten focused on veterans, and three were conducted in the UK. A wide variety of measures were used to assess provider attitudes, which limited the comparison of findings across studies.

The positive and negative attitudes of providers to videoconferencing are presented in table 3. Overall attitudes to using videoconferencing were largely positive, with providers describing it as an important and acceptable mode of treatment delivery. Providers’ positive attitudes most frequently aligned with the UTAUT construct of performance expectancy (table 3). Although overall attitudes were positive, negative views were reported. The most frequently endorsed concerns about videoconferencing fell within the UTAUT construct of effort expectancy (table 3). The review authors noted that it is possible that the perceived benefits of videoconferencing offset some of the negative aspects identified by providers.

Compared with providers who had no experience of using videoconferencing, providers who had used videoconferencing had more positive views on this mode of delivery, and more confidence in delivering care using this technology. However, it is not possible to determine causality between provider attitudes and level of experience of videoconferencing. Comparing attitudes before and after use of videoconferencing for delivery of care indicated an increase in positive attitudes, interest, comfort levels, and ease of use. There was a decrease in skepticism and apprehension about using videoconferencing after use of the technology. Predictors of increased use of videoconferencing in practice included finding the technology easy to use, having a history of training, and increased practice experience. Most studies that compared provider attitudes towards videoconferencing with attitudes towards FTFT found the latter to be more desirable.

Table 3: positive and negative provider attitudes to videoconferencing as a mode of delivering psychotherapies¹¹

Positive attitudes (UTAUT constructs and sub-constructs)	Article frequency (percentage)	Negative attitudes (UTAUT constructs and sub-constructs)	Article frequency (percentage)
Performance expectancy			
Increased access to care	16 (42)	Impersonal/interferes with therapeutic relationship	19 (54)
Saves time and money, efficient	12 (32)	Safety of patients and legal concerns	13 (37)

Can be more effective than in-person care in some circumstances, for example decreasing inhibition when discussing sensitive subjects	8 (21)	Patients will not like treatment via videoconferencing	8 (23)
Patients like treatment via videoconferencing	6 (16)	Security and confidentiality concerns	7 (20)
Increased flexibility	4 (11)	Not appropriate for certain patients, for example visually impaired or high-risk patients	5 (14)
New opportunities for provider	3 (8)	Unable to conduct thorough assessment	6 (16)
Effort expectancy			
Easy to use	7 (18)	Technological problems	23 (66)
		Increased work and hassle (scheduling, set-up, etc.)	16 (46)
Social influence			
Organisation supportive of videoconferencing	3 (8)	Poor communication or support from leadership	2 (6)
Facilitating conditions			
Availability of good technical support	4 (11)	Need for technical support and training	9 (26)
		Limited space, equipment, and funding	6 (16)

Satisfaction

The evidence on patient satisfaction with remote digital delivery of psychotherapies consisted of one systematic review and one primary study, both relating to therapy delivered via video.^{13, 14}

Depression

The systematic review assessed patient satisfaction with video consultation compared with FTFT for depression in people aged 60 or older.¹³ Twenty-one studies were incorporated including seven RCTs and four qualitative studies. Not all the included studies focused on adults aged 60 or older, and only ten studies focused solely on depression with the remaining 11 studies including conditions in addition to depression. Although the systematic

review authors stated they appraised all the included studies, the results of the appraisal were not reported. The primary studies measured patient satisfaction using a variety of questionnaires including the Client Satisfaction Question (CSQ 8), the Charleston Psychiatric Outpatient Satisfaction Scale (CPOSS) and the Treatment Evaluation Inventory (TEI).

High levels of patient and provider satisfaction with video consultation were frequently reported, although patients only received a few video consultations in some studies and therefore these scores may not translate to clinical practice. In the seven RCTs, there were no statistically significant differences in satisfaction reported in comparisons of video consultation with FTFT. The majority of RCTs reported satisfaction as a secondary outcome. Two non-randomised quantitative studies found higher satisfaction among patients who received video consultation compared with patients receiving FTFT. In the qualitative studies' explanations for patient preference for video consultation, reference was made to reduced travel and waiting times, convenience, and availability. Patients also felt less stigmatised as they received therapy at home and were not seen to be undergoing treatment for a mental health condition. Technical difficulties and a lack of technical support were mentioned as a common issues with both providers and patients.

PTSD

One primary study assessed patient satisfaction of home-based video telehealth compared with face-to-face PE therapy for treatment of PTSD in military veterans.¹⁴ Study participants were block randomised to either video telehealth or FTFT and asked to complete satisfaction questionnaires one week after finishing therapy. All participants received between eight and 12 sessions of 90 minutes duration, with a mean of 10.1 sessions (SD 1.5). The video telehealth intervention included weekly homework that was mailed to the therapist. Of 150 patients randomised, 133 started therapy and 98 patients completed therapy (65.3% of randomised patients). Sixty eight patients completed both the therapy and the satisfaction questionnaires – CPOSS and the Service Delivery Perceptions Questionnaire (SDPQ). Mean age of respondents was 44 (SD 14.4) with an age range of 20 to 75 years. Almost all participants were male (94.5%), 55.2% were white and 38.8% were black. There were no significant effects of treatment modality on any measure of perception of service quality or satisfaction.

Cost effectiveness

No systematic reviews were identified that evaluated the cost effectiveness of remote digitally delivered psychotherapies for depression or anxiety (including PTSD).

Conclusion

Low quality evidence from systematic reviews and meta-analyses of a small number of primary studies suggests that remote delivery of psychotherapies (primarily CBT) via videoconferencing or telephone does not differ in effectiveness when compared with FTFT. Further research is required to improve confidence around these findings.

Evidence on developing a therapeutic alliance during remotely delivered psychotherapy was sparse but suggested it was possible to build a therapeutic relationship via digital media. It was not clear whether the therapeutic alliance formed via digital media was as strong as that in face-to-face therapies.

Secondary evidence on the acceptability of remote delivery suggests that there is no significant difference between telephone-administered CBT compared with FTFT for depression. Evidence from two primary studies suggests that patients undergoing VCP may drop out earlier in the programme compared with FTFT.

Evidence relating to patient satisfaction with digital delivery of psychotherapies was particularly limited. One systematic review found no statistically significant differences in satisfaction when comparing VCP with FTFT for depression. One primary study reported patient satisfaction with digital delivery for PTSD and found no significant effects when compared with FTFT.

No studies were identified that reported acceptability or satisfaction in patients with anxiety disorders.

No systematic reviews of cost effectiveness of remote digital delivery of psychotherapy were identified.

Healthcare Improvement Scotland development team

- Charis Miller, Information Scientist, Healthcare Improvement Scotland
- Nikolina Angelova, Health Service Researcher, Healthcare Improvement Scotland
- Jenny Harbour, Health Service Researcher, Healthcare Improvement Scotland
- Dawn Mahal, Health Service Researcher, Healthcare Improvement Scotland
- Tracey Mac Gann, Project Officer, Healthcare Improvement Scotland

© Healthcare Improvement Scotland 2021

Published January 2021

This document is licensed under the Creative Commons Attribution-Noncommercial-NoDerivatives 4.0 International License. This allows for the copy and redistribution of this document as long as Healthcare Improvement Scotland is fully acknowledged and given credit. The material must not be remixed, transformed or built upon in any way. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0/>

References

1. Berryhill MB, Culmer N, Williams N, Halli-Tierney A, Betancourt A, Roberts H, *et al.* Videoconferencing psychotherapy and depression: a systematic Review. *Telemed J E Health.* 2019;25(6):435-46.
2. Berryhill MB, Halli-Tierney A, Culmer N, Williams N, Betancourt A, King M, *et al.* Videoconferencing psychological therapy and anxiety: a systematic review. *Fam Pract.* 2019;36(1):53-63.
3. Castro A, Gili M, Ricci-Cabello I, Roca M, Gilbody S, Perez-Ara MA, *et al.* Effectiveness and adherence of telephone-administered psychotherapy for depression: a systematic review and meta-analysis. *J Affect Disord.* 2020;260:514-26.
4. Olthuis JV, Wozney L, Asmundson GJG, Cramm H, Lingley-Pottie P, McGrath PJ. Distance-delivered interventions for PTSD: a systematic review and meta-analysis. *J Anxiety Disord.* 2016;44:9-26.
5. Turgoose D, Ashwick R, Murphy D. Systematic review of lessons learned from delivering tele-therapy to veterans with post-traumatic stress disorder. *J Telemed Telecare.* 2018;24(9):575-85.
6. Norwood C, Moghaddam NG, Malins S, Sabin-Farrell R. Working alliance and outcome effectiveness in videoconferencing psychotherapy: a systematic review and non-inferiority meta-analysis. *Clin Psychol Psychother.* 2018;25:797-808.
7. Watts S, Marchand A, Bouchard S, Gosselin P, Langlois F, Belleville G, *et al.* Telepsychotherapy for generalized anxiety disorder: Impact on the working alliance. *Special Issue: Telepsychotherapy in the Age of COVID-19.* 2020;30(2):208-25.
8. Ashwick R, Turgoose D, Murphy D. Exploring the acceptability of delivering cognitive processing therapy (CPT) to UK veterans with PTSD over skype: A qualitative study. *Eur J Psychotraumatol.* 2019;10(1).
9. Cuijpers P, Noma H, Karyotaki E, Cipriani A, Furukawa TA. Effectiveness and acceptability of cognitive behavior therapy delivery formats in adults with depression: A network meta-analysis. *JAMA Psychiatry.* 2019;76(7):700-7.
10. Valentine LM, Donofry SD, Broman RB, Smith ER, Rauch SA, Sexton MB. Comparing PTSD treatment retention among survivors of military sexual trauma utilizing clinical video technology and in-person approaches. *J Telemed Telecare.* 2020;26(7-8):443-51.
11. Benbow AA, Anderson PL. A meta-analytic examination of attrition in virtual reality exposure therapy for anxiety disorders. *J Anxiety disord.* 2019;61:18-26.
12. Connolly SL, Miller CJ, Lindsay JA, Bauer M. A systematic review of providers' attitudes toward telemental health via videoconferencing. *Clin Psychol Sci Pract.* 2020;27:e12311.
13. Christensen LF, Moller AM, Hansen JP, Nielsen CT, Gildberg FA. Patients' and providers' experiences with video consultations used in the treatment of older patients with unipolar depression: A systematic review. *J Psychiatr Ment Health Nurs.* 2020;27(3):258-71.
14. Gros DF, Lancaster CL, Lopez CM, Acierno R. Treatment satisfaction of home-based telehealth versus in-person delivery of prolonged exposure for combat-related PTSD in veterans. *J Telemed Telecare.* 2018;24(1):51-5.

Appendix 1: Abbreviations

BA	behavioural activation
BAI	Beck anxiety inventory
BDI	Beck depression inventory
CBT	cognitive behavioural therapy
CI	confidence interval
CPOSS	Charleston psychiatric outpatient satisfaction scale
CPT	cognitive processing therapy
CSQ 8	client satisfaction questionnaire
DASS	depression anxiety stress scales
EMDR	eye-movement desensitisation and reprocessing
FTFT	face-to-face therapy
HAM-D	Hamilton depression scale
NES	NHS Education Scotland
NMA	network meta-analysis
OCD	obsessive compulsive disorder
PE	prolonged exposure
PST	problem-solving therapy
PTSD	post-traumatic stress disorder
RCT	randomised controlled trial
RR	relative risk
SD	standard deviation
SDPQ	service delivery perceptions questionnaire
SMD	standardised mean difference
SUCRA	surface under the cumulative ranking curve

TEI	treatment evaluation inventory
UTAUT	unified theory of acceptance and use of technology
VCP	videoconferencing psychotherapy
WAI	working alliance inventory
WAI-SF	working alliance inventory – short form