Internet videoconferencing-delivered cognitive behavioral therapy for social anxiety disorder: protocol for a randomized controlled trial

1. Introduction

Social anxiety disorder (SAD) is characterized by an excessive fear of performance or social situations, particularly ones in which the individual fears scrutiny by others or unfamiliar people [1]. Data from a World Mental Health survey estimate a lifetime prevalence for the disorder of 4%, and 12-month prevalence of 2.4% [2]. The median age of onset is 13 years and 75% of SAD cases will manifest by 17 years of age in high income countries [2]. Left untreated, SAD has a chronic and debilitating course that can lead to impairment in multiple domains of functioning, as well as the development of co-morbid mental health disorders later in life such as depressive disorders, panic disorder and generalised anxiety disorder [3,4].

SAD can be effectively treated with cognitive behavioral therapy (CBT) [5,6]. CBT for SAD involves targeting the negative cognitions, self-focused attention and behavioral patterns hypothesized to maintain or exacerbate social anxiety [7,8] and has been shown to be an efficacious treatment in numerous meta-analyses [9,10]. There is also preliminary evidence to support the efficacy of imagery rescripting (ImR) for SAD [11–13]. ImR treatment for SAD centres on the negative self-imagery component of the Clark and Wells[7] and Rapee and Heimberg[8] models of social anxiety and involves updating negative self-images and beliefs encapsulated in memories of painful past events [14]. The retrieval competition hypothesis proposes that ImR develops new adaptive memories that compete with the original memory in subsequent retrieval, thus reducing distress [15]. A recent meta-analysis of ImR for aversive memories included six trials of ImR for SAD, three of which were RCTs[16]. Within-group effect sizes on SAD measures were large from pre-treatment to post-treatment (g = 1.22) and large from pre-treatment to follow-up (g = 1.79)[16]. Indeed, even a single session of ImR has

been found to facilitate significant shifts in memory-derived core beliefs and increases in positive and neutral but not negative memory details[12]. This suggests that effect sizes associated with ImR for SAD are large and comparable to those seen in CBT. Despite the availability of efficacious treatments for SAD, environmental, logistical, and psychological barriers prevent a high proportion of individuals from seeking help in traditional in-person settings [17]. One way to overcome these barriers is to provide specialized treatment remotely.

Remotely delivered treatments do not require the clinician and client to be in the same location and these interventions can be provided as either a low-intensity or high-intensity treatment. Low-intensity treatments are predominantly self-help in nature either with or without the support of a clinician. In low-intensity treatments, a clinician will provide anywhere from nil to 10-minutes of support each week through telephone, email or encrypted asynchronous messaging service [18]. High intensity remote treatments are analogous to traditional in-person treatments in requiring the same level of clinician support (e.g., 50-minutes per week), but are delivered remotely through the internet using videoconferencing software, or telephone. Low-intensity remote CBT for SAD has been shown to be efficacious across the various administration formats including internet-delivered CBT (iCBT; g = 1.08), application- delivered CBT (aCBT; g = 1.19) and bibliotherapy- delivered CBT (bCBT; g = 0.79)[19]. Thus far, effect sizes of low intensity remote treatment for SAD are promising. Currently, the number of studies examining high-intensity remote CBT treatment for SAD is small with a recent meta-analysis finding only one such published study meeting the study criteria[19].

In this study, Matsumoto[20] investigated videoconferencing-delivered CBT (vCBT) in an open trial format. This study found a significant reduction in social anxiety symptoms (Cohen's d = 1.10) following 16 sessions of individualized videoconference-delivered CBT.

In this study 4/9 participants (44%) met criteria for treatment response and 2/9 (22%) met criteria for remission. While the results of this study are promising, there are a number of limitations to the methodology including a small sample size (n = 9), no control condition, and limited clarity regarding the treatment manual and content of the intervention. Thus, the acceptability and efficacy of high-intensity remote CBT for SAD requires further investigation in controlled trials.

More generally, videoconferencing CBT for internalising disorders are promising[21,22]. A recent systematic review of videoconferencing psychological therapy compared to in-person therapy for anxiety disorders and synthesised data across randomized studies (6/21), quasi-experimental studies (4/21), and uncontrolled studies (11/21). CBT was the most common intervention evaluated with statistically significant improvement on validated anxiety measures in 14 of 21 studies included[22]. However, of the six RCTs included, only one examined anxiety as a primary outcome measure[22]. This particular RCT was a direct comparison of vCBT to in-person CBT for mood and anxiety disorders and found similar reduction in anxiety symptoms across both groups[23]. However, only one participant included in this RCT had a primary diagnosis of SAD.

The literature examining the efficacy of vCBT using disorder-specific treatments for anxiety and related disorders is small but growing. For example, a recent meta-analysis examining remote treatment for obsessive-compulsive disorder included six high intensity remote treatment trials and found a large pre-treatment to post-treatment within-group effect size for vCBT (g = 1.68)[24]. Similarly, a meta-analysis for remote treatment of panic disorder included three vCBT studies also resulting in a large within-group effect size (g = 1.10)[25]. Although there is growing evidence in the literature of disorder-specific vCBT RCTs, there are currently no SAD disorder-specific vCBT RCTs to date despite the prevalence of SAD in

the community comparative to other anxiety disorders. Examining the acceptability and efficacy of vCBT and vImR for SAD in particular is important given the characterisation of the disorder. For example, it is yet unknown whether people with SAD find videoconferencing more or less confronting compared to in-person treatment, or whether videoconferencing is a less preferred method of treatment delivery. It is also not yet known whether treatment efficacy may be compromised should there be less opportunity to complete core interventions such as exposure and detection of safety behaviours. Further, although effect sizes of low intensity remote treatment for SAD compared to in-person treatment are promising[18], it is unknown whether therapeutic alliance may be compromised in this virtual high intensity medium for people with SAD.

This protocol study describes the procedures and methodology of a randomized controlled trial (RCT) investigating the efficacy and acceptability of vCBT for SAD, and a further open trial of videoconferencing delivered ImR (vImR) for SAD utilising the waitlist control group (WLC). To date, there is no known vCBT RCT for SAD and clinical trials of ImR have only examined the efficacy of the approach in in-person settings. The study is purposefully designed to address these significant gaps in the literature. Although there is arguably less ecological validity in the use of a WLC, it provides a non-intervention evaluation and comparison of vCBT, an important early phase in the common standards of clinical trials[26]. Based on the limited existing literature, it is hypothesized that high-intensity vCBT will (1) be acceptable to individuals with SAD; (2) result in significant reductions in symptoms, resulting in large within-group effect sizes from pre-treatment to post-treatment and pre-treatment to follow-up and large between-group effect sizes at post-treatment; (3) vCBT and vImR will result in similar reductions to standard in-person CBT and in-person ImR. It is anticipated that the results of the proposed study will add to the literature informing best-practice psychological treatment for SAD, and the findings may result in the improved

dissemination of CBT for SAD, resulting in more individuals who are able to access evidence-based treatment for this disorder. Additionally, the results of the study may provide an important justification for government policy and funding improvements to ultimately increase access for vulnerable populations living in non-urban areas who experience treatment inequity[27,28].Further, the results will inform future studies comparing vCBT to treatment as usual and/or in-person CBT.

2. Materials and method

2.1 Participants

Seventy-eight individuals will be recruited for this study. To be included in the trial, participants are required to (1) currently reside in Australia, (2) be aged over eighteen years, (3) be fluent in English, (4) meet criteria for SAD as the primary diagnosis, (5) be either medication free or on a stable dose of psychotropic medication (including benzodiazepines and anti-psychotic medications), (6) not currently be receiving regular psychological services for their SAD. Participants will be excluded if they have symptoms that will put them at risk of harming themselves or others or will confound results of the treatment. Participants will also be excluded if they do not have regular access to the Internet and camera. Given that individuals with SAD in Australia rarely receive an evidence-based treatment for SAD[29–32] , this was not an exclusion criteria in the current study. A complete list of inclusion and exclusion criteria is outlined in Table 1.

Table 1. Inclusion criteria and rationale

Inclusion criteria	Rationale
1. Currently resides in Australia	Study population

2. Aged 18+ years	Study population
3. Fluent in English	Treatment confound/ participant concern
4. Meets criteria for SAD as primary diagnosis and the disorder is of at least 'moderate severity' (defined as a score of 4 on the DIAMOND module severity measure)	Study population
5. Medication free or on a stable dose of psychotropic medication	Treatment confound
6. Not currently receiving regular psychological services for their SAD symptoms (defined as sessions at least once a week with a qualified mental health professional)	Treatment confound
Exclusion criteria	**Rationale**
1. Severe depressive symptoms as assessed by a score of 20 or above on the PHQ-9	Participant safety
2. Are at suicide risk by a score of "2" (more than half the days) or higher on item 9 of the PHQ-9 on the screening questions or via clinician judgement during the interview using the C-SSRS	Participant safety
3. Engage in daily alcohol use or daily illicit drug use	Treatment confound
4. Presence of schizophrenia spectrum disorder as assessed by the DIAMOND	Treatment confound

5. Significant cognitive/intellectual impairment as assessed during the diagnostic interview	Treatment confound
6. A medical condition that may interfere with treatment	Treatment confound
7. Does not have access to a computer with a camera and stable internet on a regular basis	Feasibility
8. Is not willing to engage in treatment via internet video-conferencing software	Feasibility

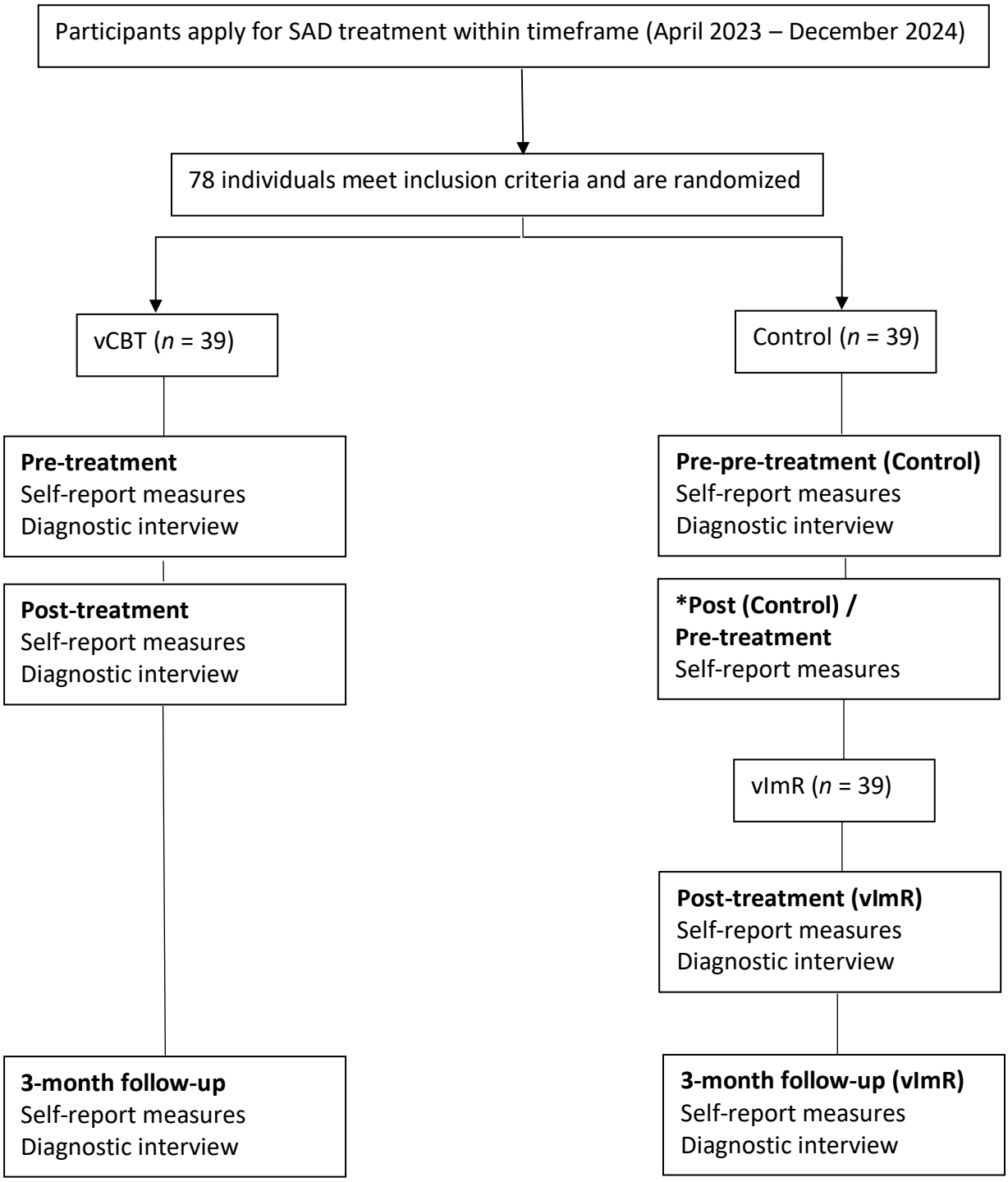
2.2 Design

A CONSORT-R compliant 2-group randomized controlled trial (RCT) will investigate the research questions. Randomisation will be conducted using a computer-generated list of random numbers to assign participants on a 1:1 basis to one of two groups using the website www.random.org. Allocation will be concealed from assessing clinicians where possible. As outlined in Figure 1, the larger RCT will randomise participants to either vCBT (8 weeks) or a waitlist control group (8 weeks). Once the waitlist period is over the waitlist control group will receive vImR (8 weeks).

2.3 Recruitment

Participants will be recruited via advertising on social media, via email on professional networking sites, as well as direct emails to community-based clinicians, general practitioners, and psychiatrists. Hard copy flyers will also be posted on community noticeboards and applications will be made to have the study advertised with relevant not-for-profit organisations. Participants will provide informed consent prior to commencing the screening process.

Figure 1. Participant flow.



Note: *Participants in the control group commence the vImR treatment 8-weeks after pre-treatment measures.

2.4 Screening measures

Demographic questionnaire. A 15-item standard demographic questionnaire will collect information on age, location, gender, marital, employment and education status, and medication use.

Risk Questionnaire. Deliberate self-harm and problematic alcohol and/or illicit drug use will be assessed with the Risk Questionnaire. This five-item questionnaire has been used in other remote treatment studies [33] to screen out individuals who may have symptoms characterised by higher levels of risk.

Diagnostic Interview for Anxiety, Mood, and Obsessive-Compulsive and Related Neuropsychiatric Disorders (DIAMOND) [34]**.** The DIAMOND is a structured clinical interview that systematically assesses the DSM-5 diagnostic criteria for anxiety disorders, mood disorders, obsessive compulsive and related disorders, trauma and stressor related disorders, schizophrenia spectrum disorders, eating disorders, somatic symptom and related disorders, substance use disorders, and selected neurodevelopmental disorders. Relevant modules from the DIAMOND will be delivered by provisional psychologists in their final year of Master of Clinical Psychology at the University of Technology Sydney or registered psychologists under the supervision of a senior clinical psychologist. All clinicians administering the DIAMOND will receive formal training in this specific tool and adherence to the interview procedures will be monitored by project investigators. The DIAMOND demonstrates very good interrater reliability (kappa = .70) and excellent test-retest validity (kappa = .86) for the SAD diagnosis [34]. The DIAMOND will be readministered at post-treatment and follow-up to measure diagnostic change. Participant allocation will be concealed from the clinicians administering the DIAMOND at these time points where possible.

Columbia-Suicide Severity Rating Scale (C-SSRS) [35]. The C-SSRS is a semi-structured interview of suicide risk designed to examine the severity and lethality of suicidal ideation and behaviour in both paediatric and adult populations. The scale assesses multiple features related to suicidal ideation and suicidal behaviour across the entire lifespan and in the recent past by asking questions related to the severity and frequency of ideation and behaviour. The C-SSRS demonstrates good convergent and divergent validity and high sensitivity for suicidal behaviour classifications and is suitable for assessment of suicidal ideation and behaviour in research settings [35].

2.5 Primary outcome measure

Social Interaction Anxiety Scale and Social Phobia Scale – Short Form (SIAS-6 and SPS-6) [36]**.** The SIAS and SPS are a companion set of measures designed to assess two similar yet distinct aspects of social anxiety which constitute the core features of the disorder[37,38]. Specifically, the SIAS-6 measures the more generalized social interaction anxieties such as making eye-contact with others, talking to friends and strangers, and attending a social gathering or party, and the SPS-6 measures specific scrutiny fears such as attracting the attention of others, or eating, drinking and writing in the presence of others[37]. The short forms are self-report measures, each comprised of six items. The items are rated on a 5-point Likert scale ranging from 0 (not at all characteristic or true of me) to 4 (completely characteristic or true of me). The optimum cut-off scores for discriminating between those with and without a diagnosis of SAD are 7 or higher on the SIAS-6 and 2 or higher on the SPS-6 [37]. The short forms have demonstrated sound psychometric properties displaying adequate to good internal consistency (α = .75 - .85), convergent and discriminant validity, diagnostic discrimination, test-retest reliability and treatment sensitivity in previous studies [37,39].

2.6 Secondary outcome measures

Social Anxiety Disorder Dimensional Scale (SAD-D) [40]**.** The SAD-D is a 10-item self-report measure of social anxiety symptom severity that can be conceptualized on a continuum aligned with the dimensional approach of the DSM-5-TR[1,41]. Each item is rated on a five-point Likert scale ranging from zero ("never" or "none") to four ("all the time" or "extreme"). The SAD-D has demonstrated good validity and internal consistency in previous samples [42], including within an Australian community sample [41,43], and good to excellent test-retest reliability [43] . Currently, the SAD-D is the only social anxiety scale that is based on the DSM-5 criteria and reflects the dimensional nature of the disorder[44].

Patient Health Questionnaire – 9 item (PHQ-9) [45]**.** The PHQ-9 is a widely used 9-item measure of depressive symptoms. Each item is rated on a 4-point Likert scale from 0 to 3 (0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day). The sum of these 9 items provides an indication of depression severity, with scores of 10 or above indicating clinically significant depression [46,47]. The PHQ-9 has been widely demonstrated to have excellent psychometric properties including internal consistency, test-retest reliability and discriminative validity [47,48].

NIMH Clinician Global Impression (CGI) Scale (self-report version) [49]**.** The CGI is a commonly used single item measure of severity of symptoms and improvement of symptoms. Severity scores range from 1 (normal) to 7 (severely ill) and improvement scores range from 1 (very much improved) to 7 (very much worse). The CGI ratings have been found to be positively correlated with both self-report and clinician-administered measures of symptom-specific improvement among individuals with social anxiety disorder with good test-retest reliability [50].

Sheehan Disability Scale (SDS) [51]**.** The SDS is a commonly used 3-item measure that assesses how much psychiatric symptoms have interfered with work, social, and home life functioning. A cut score of 5 on any item has been used to identify individuals with clinically relevant symptoms in previous studies[52] with high reliability in primary care settings[53]. Further, it has been identified to be a valid tool in the study of disability in SAD [54,55].

2.7 Process/acceptability measures

Working Alliance Inventory-Short Form Revised (WAI-SR) [56]. The WAI-SR is a shortened version of the original Working Alliance Inventory (WAI)[57]. It is used to measure the therapeutic alliance in an ongoing client-therapist interaction. It comprises 12 items that are scored on a 5-point Likert scale, ranging from 'seldom' to 'always', with higher scores associated with better treatment outcomes. The WAI-SR has high internal consistency and reliability in previous samples [58].

Client Satisfaction Questionnaire (CSQ) [59]. The CSQ is an 8-item measure of the participant's satisfaction with the treatment they were provided. The scale has demonstrated adequate psychometric properties in previous studies[60] and has wide-ranging use in primary care medical and mental health treatment [61].

Acceptability Questionnaire (AQ). The AQ is a 10-item measure of acceptability of remote treatments. The questionnaire has been used in other remote treatments [33].

Table 2. Administration schedule for outcome measures

	Screening	Pre-treatment	Mid-treatment	Post-treatment	3-month follow-up
Screening Measures					
Demographics	+				
Risk questionnaire	+				
DIAMOND	+			+	+
C-SSRS	+				
Primary Outcome Measure					
SIAS-6/SPS-6		+	+	+	+
Secondary Outcome Measures					
SAD-D		+	+	+	+
PHQ-9		+	+	+	+
CGI		+	+	+	+
SDS		+	+	+	+
Process/Acceptability Measures					
WAI-SF			+	+	
CSQ			+	+	
AQ			+	+	

Note. DIAMOND = Diagnostic Interview for Anxiety, Mood, and Obsessive-Compulsive and Related Neuropsychiatric Disorders; C-SSRS = C-Suicide Severity Rating Scale; SIAS = Social Interaction Anxiety Scale; SPS = Social Phobia Scale; SAD-D = Social Anxiety Disorder-Dimensional Scale; PHQ-9 = Patient Health Questionnaire-9 item; CGI = NIMH Clinician Global Impression Scale (self-report version); SDS = Sheehan Disability Scale; WAI-SF =

Working Alliance Inventory-Short Form; CSQ = Client Satisfaction Questionnaire, AQ = Acceptability Questionnaire.

2.8 Risk management

Risk assessments will be completed during the recruitment process, screening process and throughout treatment. Any participant who discloses suicidal risk during the recruitment or screening process will be excluded from the study and will be supported to find more suitable treatment. All participants are also made aware of the steps they can take in a mental health emergency. Additionally, each participant in the study will receive an individualized safety plan during the first session and risk will be monitored during the treatment sessions. Participants whose risk becomes high or who experience deteriorating symptoms will be contacted by the research team and encouraged to contact their health professionals or emergency services.

2.9 Treatment

The vCBT and vImR treatment protocols described are outlined in Table 3. The vCBT intervention is based on the Rapee and Heimberg [8] model of SAD. The treatment protocol has been used in previous clinical trials for SAD [62] and comprises 5 modules covering the following topics: (1) psychoeducation, (2) challenging automatic thoughts, (3) challenging core beliefs, (4) exposure, and (5) relapse prevention/consolidation. The vImR enhanced CBT protocol includes 4 modules based on the previously published Wild and Clark[14] treatment procedure for SAD and covers the following topics: (1) psychoeducation, (2) identification and exploration of negative self-imagery and core beliefs, (3) imagery rescripting, and (4) relapse prevention/consolidation. After the post-treatment assessment, participants will be

encouraged to consult with the primary care physician if they require ongoing treatment for their symptoms of SAD or other mental health conditions.

All treatments are manualised and are individually administered in 8 x weekly (50 min) sessions. In both treatments, participants will also be required to complete homework tasks between sessions. Treatment will be delivered by either provisionally registered psychologists in their final year of a Master of Clinical Psychology degree or a clinical psychology registrar under the supervision of an experienced clinical psychologist. All treating psychologists will be familiar with delivering manualised treatments and thoroughly trained in the administration of the treatment protocol by the project investigators. All sessions will be recorded and at least 10% of sessions will be randomly selected for clinician treatment compliance and integrity checking. This clinician compliance with the treatment manual will be assessed by the Chief Investigator of the study. Treating clinicians will receive weekly supervision to review client progress and address clinical issues arising from sessions. Participant compliance with the treatment will be monitored through homework completion rates, homework reviews, direct observation, and session attendance.

2.10 Analysis

2.10.1 Data storage and analysis

In order to maintain confidentiality, all electronic data will comply with data safety standards and the National Statement of Ethical Conduct in Human Research. All electronic data will be de-identified and stored on a restricted-access network drive and only researchers will have access to the data.

Table 3. Treatment protocol

vCBT Treatment		vImR enhanced CBT Treatment	
Session	Module	Session	Module
1	Psychoeducation	1	Psychoeducation
2	Challenging automatic thoughts	2	Identification and exploration of negative self-imagery and core beliefs
3	Challenging automatic thoughts	3	Imagery rescripting
4	Challenging core beliefs	4	Imagery rescripting
5	Exposure	5	Imagery rescripting
6	Exposure	6	Imagery rescripting
7	Exposure	7	Imagery rescripting
8	Relapse prevention	8	Relapse prevention

The main analyses looking at treatment outcomes from the RCT will be carried out using conservative intention-to-treat principles and using mixed-linear models analyses to handle missing data. Mixed models are a robust statistical approach for analysing longitudinal clinical trial data [63] and these analyses will employ an appropriate covariance structure and maximum likelihood estimation, which provides unbiased estimates in the case of missing data; under the assumption that data is missing at random [63]. In the case data is missing not at random, appropriate analysis methods will be used to reduce bias[64]. Sensitivity analyses will be used to evaluate potential impact of missing data on the findings[64]. Effect

sizes will be calculated according to Cohen's *d* where .20 is considered a small effect, .50 a medium effect and .80 a large effect[65]. Both within-group and between-group effect sizes will be calculated. Within-group effect sizes will be calculated for the vCBT group from pre-treatment to post-treatment and pre-treatment to 3-month follow up. Once the vImR group commences treatment (after completing their time as the waitlist control) within-group effect sizes will be calculated from pre-treatment to post-treatment and pre-treatment to 3 month follow up. Between-group effect sizes will be calculated at post-treatment comparing the vCBT group to the waitlist control group. The vCBT and vImR protocols will be compared with standard in-person treatment by benchmarking effect sizes[66] from the immediate treatment arm of the RCT (vCBT) and open trial (vImR) with existing data available from meta-analytic studies of in-person CBT[67,68] and RCTs of in-person ImR[69–71] . This approach will be consistent with the approach outlined by Minami et al [66]. Such an approach has been used in other published studies[72,73]

Clinically significant change will be measured in three ways. Firstly, diagnostic change will be assessed at post-treatment and 3-month follow up using the DIAMOND[34]. Secondly, consistent with previous studies of social anxiety[74,75], treatment response will be defined using the Jacobson & Truax[76] reliable change index (RCI) to indicate a change score that is likely to be statistically reliable and not attributable to measurement error[76]. Reliable change will be completed on the SIAS and SPS. Finally, clinically significant change (CSC) at post-treatment and 3-month follow up will be defined as meeting the RCI and a SIAS score below 7 and SPS score below 2[37]. Reliable deterioration will be defined as increased symptoms by the RCI magnitude of change on the SIAS and SPS at post-treatment.

2.10.2 Power

With alpha set at .05, power set at .80, and a sample size of 39 in each group, the study is powered to enable the detection of large effect size (i.e., Cohen's d = 0.80) difference in symptoms, which would be the minimum expected reduction in the RCT based on existing research [77]. Therefore, the total N for the study is 78 with 39 individuals in the immediate treatment group and 39 individuals in the waitlist control group.

2.10.3 Ethical approval and trial registration

The study was approved by the University of Technology Sydney Health and Medical Research Ethics Committee (UTS MREC REF NO. ETH22-7803). The trial is registered with the Australian and New Zealand Clinical Trials Registry (ACTRN12623000313639) and includes the full study protocol and participant information sheet and consent form. While not anticipated, any changes to the protocol will be updated through the ANZCTR registry.

3. Conclusion

SAD is a chronic and impairing mental health condition [2]. CBT is effective for SAD[5,10] ; however, many individuals experience logistical barriers to accessing this treatment [78,79]. High-intensity remote treatment may assist patients in overcoming these barriers. The primary aim of this study is to examine the acceptability and efficacy of vCBT for SAD. A secondary aim is to examine the acceptability of vImR enhanced treatment for SAD. This will be the first study to examine the efficacy of vCBT for SAD in a controlled design and the only study to examine remote vImR for SAD. It is anticipated that the results will contribute to the evidence base of remotely delivered vCBT and vImR for SAD and provide important data on the acceptability and efficacy of treatment approaches.

Trial status

Protocol version 1.1 was approved on 28 March 2023. Recruitment commenced in April 2023 and is expected to be completed by December, 2024.

References

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (5th Ed., Text Rev.)*.; 2022. doi:10.1176/appi.books.9780890425787
2. Stein DJ, Lim CCW, Roest AM, et al. The cross-national epidemiology of social anxiety disorder: Data from the World Mental Health Survey Initiative. *BMC Med*. 2017;15(1). doi:10.1186/s12916-017-0889-2
3. Crome E, Baillie A. Social anxiety disorder diagnostic criteria perform equally across age, comorbid diagnosis, and performance/interaction subtypes. *Anxiety Stress Coping*. 2015;28(2):179-191. doi:10.1080/10615806.2014.930445
4. Kessler RC, Petukhova M, Sampson NA, Zaslavsky AM, Wittchen HU. Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. *Int J Methods Psychiatr Res*. 2012;21(3):169-184. doi:10.1002/mpr
5. Mayo-Wilson E, Dias S, Mavranezouli I, et al. Psychological and pharmacological interventions for social anxiety disorder in adults: a systematic review and network meta-analysis. *Lancet Psychiatry*. 2014;1(5):368-376. doi:10.1016/S2215-0366(14)70329-3
6. National Institute for Health and Care Excellence. *Social Anxiety Disorder: Assessment and Treatment.*; 2013. doi:10.1002/9781118775349.ch47
7. Clark DM, Wells A. A cognitive model of social phobia. In: Heimberg G, Liebowitz MRMR, Hope D, Scheier F, eds. *Social Phobia: Diagnosis, Assessment and Treatment*. The Guildford Press; 1995:69-93.
8. Rapee RM, Heimberg RG. A Cognitive-Behavioral Model of Anxiety in Social Phobia. *Behavior Research and Therapy*. 1997;35(8):741-756.

9. Deacon BJ, Abramowitz JS. Cognitive and Behavioral Treatments for Anxiety Disorders: A Review of Meta-analytic Findings. *J Clin Psychol*. 2004;60(4):429-441. doi:10.1002/jclp.10255

10. Van Dis EAM, Van Veen SC, Hagenaars MA, et al. Long-term Outcomes of Cognitive Behavioral Therapy for Anxiety-Related Disorders: A Systematic Review and Meta-analysis. *JAMA Psychiatry*. 2020;77(3):265-273. doi:10.1001/jamapsychiatry.2019.3986

11. Lloyd J, Marczak M. Imagery rescripting and negative self-imagery in social anxiety disorder: a systematic literature review. *Behavioural and cognitive psychotherapy*. 2022;50(3):280-297. doi:10.1017/S135246582200008X

12. Romano M, Moscovitch DA, Huppert JD, Reimer SG, Moscovitch M. The effects of imagery rescripting on memory outcomes in social anxiety disorder. *J Anxiety Disord*. 2020;69. doi:10.1016/j.janxdis.2019.102169

13. Takanashi R, Yoshinaga N, Oshiro K, et al. Patients' perspectives on imagery rescripting for aversive memories in social anxiety disorder. *Behavioural and Cognitive Psychotherapy*. Published online 2019:229-242. doi:10.1017/S1352465819000493

14. Wild J, Clark DM. Imagery rescripting of early traumatic memories in social phobia. *Cogn Behav Pract*. 2011;18(4):433-443. doi:10.1016/j.cbpra.2011.03.002

15. Brewin CR, Gregory JD, Lipton M, Burgess N. Intrusive Images in Psychological Disorders: Characteristics, Neural Mechanisms, and Treatment Implications. *Psychol Rev*. 2010;117(1):210-232. doi:10.1037/a0018113

16. Morina N, Lancee J, Arntz A. Imagery rescripting as a clinical intervention for aversive memories: A meta-analysis. *J Behav Ther Exp Psychiatry*. 2017;55:6-15. doi:10.1016/j.jbtep.2016.11.003

17. Bruffaerts R, Harris MG, Kazdin AE, et al. Perceived helpfulness of treatment for social anxiety disorder: findings from the WHO World Mental Health Surveys. *Soc Psychiatry Psychiatr Epidemiol*. 2022;57(10):2079-2095. doi:10.1007/s00127-022-02249-3

18. Carlbring P, Andersson G, Cuijpers P, Riper H, Hedman-Lagerlöf E. Internet-based vs. face-to-face cognitive behavior therapy for psychiatric and somatic disorders: an updated systematic review and meta-analysis. *Cogn Behav Ther*. 2018;47(1):1-18. doi:10.1080/16506073.2017.1401115

19. Winter HR, Norton AR, Burley JL, Wootton BM. Remote Cognitive Behaviour Therapy for Social Anxiety Disorder: A Meta-Analysis. *J Anxiety Disord*. (Under Review).

20. Matsumoto K, Hamatani S, Nagai K, Sutoh C, Nakagawa A, Shimizu E. Long-Term effectiveness and cost-effectiveness of videoconference-delivered cognitive behavioral therapy for obsessive-compulsive disorder, panic disorder, and social anxiety disorder in Japan: One-year follow-up of a single-arm trial. *JMIR Ment Health*. 2020;7(4). doi:10.2196/17157

21. Tuerk PW, Keller SM, Acierno R. Treatment for Anxiety and Depression via Clinical Videoconferencing: Evidence Base and Barriers to Expanded Access in Practice. *Focus (Madison)*. 2018;16(4):363-369. doi:10.1176/appi.focus.20180027

22. Berryhill MB, Halli-Tierney A, Culmer N, et al. Videoconferencing psychological therapy and anxiety: A systematic review. *Fam Pract*. 2018;36(1):53-63. doi:10.1093/fampra/cmy072

23. Stubbings DR, Rees CS, Roberts LD, Kane RT. Comparing in-person to videoconference-based cognitive behavioral therapy for mood and anxiety disorders: Randomized controlled trial. *J Med Internet Res*. 2013;15(11). doi:10.2196/jmir.2564

24. Wootton BM. Remote cognitive-behavior therapy for obsessive-compulsive symptoms: A meta-analysis. *Clin Psychol Rev*. 2016;43:103-113. doi:10.1016/j.cpr.2015.10.001

25. Efron G, Wootton BM. Remote cognitive behavioral therapy for panic disorder: A meta-analysis. *J Anxiety Disord*. 2021;79. doi:10.1016/j.janxdis.2021.102385

26. National Health and Medical Research Council (Australia). *Australian Code for the Responsible Conduct of Research.* NHMRC; 2018.

27. Hashmi R, Alam K, Gow J, Alam K, March S. Inequity in psychiatric healthcare use in Australia. *Soc Psychiatry Psychiatr Epidemiol*. Published online April 1, 2022. doi:10.1007/s00127-022-02310-1

28. Carpenter-Song E, Snell-Rood C. The changing context of rural America: A call to examine the impact of social change on mental health and mental health care. *Psychiatric Services*. 2017;68(5):503-506. doi:10.1176/appi.ps.201600024

29. Hipol LJ, Deacon BJ. Dissemination of Evidence-Based Practices for Anxiety Disorders in Wyoming: A Survey of Practicing Psychotherapists. *Behav Modif*. 2013;37(2):170-188. doi:10.1177/0145445512458794

30. Chapdelaine A, Carrier JD, Fournier L, Duhoux A, Roberge P. Treatment adequacy for social anxiety disorder in primary care patients. *PLoS One*. 2018;13(11). doi:10.1371/journal.pone.0206357

31. Andrews G, Issakidis C, Sanderson K, Corry J, Lapsley H. Utilising survey data to inform public policy: comparison of the cost-effectiveness of treatment of ten mental disorders. *British Journal of Psychiatry*. 2004;184(June):526-533. doi:10.1192/bjp.184.6.526

32. Black J, Paparo J, Wootton BM. A Preliminary Examination of Treatment Barriers, Preferences, and Histories of Women with Symptoms of Social Anxiety Disorder. *Behaviour Change.*

33. Wootton BM, Karin E, Titov N, Dear BF. Self-guided internet–delivered cognitive behavior therapy (ICBT) for obsessive-compulsive symptoms: A randomized controlled trial. *J Anxiety Disord*. 2019;66. doi:10.1016/j.janxdis.2019.102111

34. Tolin DF, Gilliam C, Wootton BM, et al. Psychometric Properties of a Structured Diagnostic Interview for DSM-5 Anxiety, Mood, and Obsessive-Compulsive and Related Disorders. *Assessment*. 2018;25(1):3-13. doi:10.1177/1073191116638410

35. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: Initial Validity and Internal Consistency Findings from Three Multisite Studies with Adolescents and Adults. *American Journal of Psychiatry*. 2011;168(12):1266-1277. www.cssrs.columbia.edu

36. Mattick RP, Clarke JC. Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy*. 1998;36:455-470.

37. Peters L, Sunderland M, Andrews G, Rapee RM, Mattick RP. Development of a short form Social Interaction Anxiety (SIAS) and Social Phobia Scale (SPS) using nonparametric item response theory: The SIAS-6 and the SPS-6. *Psychol Assess*. 2012;24(1):66-76. doi:10.1037/a0024544

38. Heidenreich T, Schermelleh-Engel K, Schramm E, Hofmann SG, Stangier U. The factor structure of the Social Interaction Anxiety Scale and the Social Phobia Scale. *J Anxiety Disord*. 2011;25(4):579-583. doi:10.1016/j.janxdis.2011.01.006

39. Le Blanc AL, Bruce LC, Heimberg RG, et al. Evaluation of the Psychometric Properties of Two Short Forms of the Social Interaction Anxiety Scale and the Social Phobia Scale. *Assessment*. 2014;21(3):312-323. doi:10.1177/1073191114521279

40. LeBeau RT, Glenn DE, Hanover LN, Beesdo-Baum K, Wittchen HU, Craske MG. A dimensional approach to measuring anxiety for DSM-5. *Int J Methods Psychiatr Res*. 2012;21(4):258-272. doi:10.1002/mpr.1369

41. Rice K, Schutte NS, Rock AJ, Murray C V. Structure, Validity and Cut-Off Scores for the APA Emerging Measure: DSM-5 Social Anxiety Disorder Severity Scale (SAD-D). *Journal of Depression and Anxiety 1 J Dep Anxiety*. 2021;10(5). doi:10.35248/2167-1044.21.10.406

42. LeBeau RT, Mesri B, Craske MG. The DSM-5 social anxiety disorder severity scale: Evidence of validity and reliability in a clinical sample. *Psychiatry Res*. 2016;244:94-96. doi:10.1016/j.psychres.2016.07.024

43. Binasis T, Groves D, Wootton BM, Moses K. Psychometric properties of the DSM-5 social anxiety disorder dimensional scale in an Australian community sample. *J Clin Psychol*. 2022;78(5):938-950. doi:10.1002/jclp.23262

44. Wong QJJ, Gregory B, McLellan LF. A Review of Scales to Measure Social Anxiety Disorder in Clinical and Epidemiological Studies. *Curr Psychiatry Rep*. 2016;18(4):1-15. doi:10.1007/s11920-016-0677-2

45. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9 Validity of a Brief Depression Severity Measure. *J Gen Intern Med*. 2001;16(9). doi:10.1046/j.1525-1497.2001.016009606.x

46. Manea L, Gilbody S, McMillan D. Optimal cut-off score for diagnosing depression with the Patient Health Questionnaire (PHQ-9): A meta-analysis. *Can Med Assoc J*. 2012;184(3). doi:10.1503/cmaj.110829

47. Zuithoff NP, Vergouwe Y, King M, et al. The patient health questionnaire-9 for detection of major depressive disorder in primary care: Consequences of current thresholds in a crosssectional study. *BMC Fam Pract*. 2010;11(98). doi:10.1186/1471-2296-11-98

48. Costantini L, Pasquarella C, Odone A, et al. Screening for depression in primary care with Patient Health Questionnaire-9 (PHQ-9): A systematic review. *J Affect Disord*. 2020;279:473-483. doi:10.1016/j.jad.2020.09.131

49. Guy W. *ECDEU Assessment Manual for Psychopharmacology, Revised.* US Department of Health, Education, and Welfare Publication (ADM); 1976.

50. Zaider TI, Heimberg RG, Fresco DM, Schneier FR, Liebowitz MR. Evaluation of the clinical global impression scale among individuals with social anxiety disorder. *Psychol Med*. 2003;33(4):611-622. doi:10.1017/S0033291703007414

51. Sheehan D V. *The Anxiety Disease*. Scribner; 1983.

52. Leon AC, Shear MK, Portera L, Klerman GL. Social Psychiatry and Psychiatric Epidemiology Assessing impairment in patients with panic disorder: the Sheehan Disability Scale. *Social Psychiatry Psychiatric Epidemiology*. 1992;27:78-82.

53. Leon AC, Olfson M, Portera L, Farber L, Sheehan D V. Assessing Psychiatric Impairment in Primary Care with the Sheehan Disability Scale. *Int J Psychiatry Med*. 1997;27(2):93-105. doi:https://doi.org/10.2190/T8EM-C8YH-373N-1UWD

54. Hambrick JP, Turk CL, Heimberg RG, Schneier FR, Liebowitz MR. Psychometric properties of disability measures among patients with social anxiety disorder. *J Anxiety Disord*. 2004;18(6):825-839. doi:10.1016/j.janxdis.2003.10.004

55. Aderka IM, Hofmann SG, Nickerson A, Hermesh H, Gilboa-Schechtman E, Marom S. Functional impairment in social anxiety disorder. *J Anxiety Disord*. 2012;26(3):393-400. doi:10.1016/j.janxdis.2012.01.003

56. Hatcher RL, Gillaspy JA. Development and validation of a revised short version of the Working Alliance Inventory. *Psychotherapy Research*. 2006;16(1):12-25. doi:10.1080/10503300500352500

57. Horvath AO, Greenberg LS. Development and validation of the Working Alliance Inventory. *J Couns Psychol*. 1989;36(2):223-233. doi:10.1037/0022-0167.36.2.223

58. Paap D, Dijkstra PU. Working Alliance Inventory-Short Form Revised. *J Physiother*. 2017;63(2):118. doi:10.1016/j.jphys.2017.01.001

59. Larsen DL, Attkisson CC, Hargreaves WA, Nguyen TD. Assessment of Client/Patient Satisfaction: Development of a General Scale. *Evaluation and Program Plannmg*. 1979;2:197-207. doi:10.1016/ 0149-7189(79) 90094-6.

60. Kelly PJ, Kyngdon F, Ingram I, Deane FP, Baker AL, Osborne BA. The Client Satisfaction Questionnaire-8: Psychometric properties in a cross-sectional survey of people attending residential substance abuse treatment. *Drug Alcohol Rev*. 2018;37(1):79-86. doi:10.1111/dar.12522

61. Attkisson CC, Greenfield TK. The UCSF Client Satisfaction Scales: I. The Client Satisfaction Questionnaire-8. In: Maruish ME, ed. *The Use of Psychological Testing for Treatment Planning and Outcomes Assessment: Instruments for Adults*. Lawrence Erlbaum Associates Publishers; 2004:799-811.

62. Wootton BM, Hunn A, Moody A, Lusk BR, Ranson VA, Felmingham KL. Accelerated Outpatient Individual Cognitive Behavioural Therapy for Social Anxiety Disorder: A Preliminary Pilot Study. *Behavioural and Cognitive Psychotherapy*. 2018;46(6):690-705. doi:10.1017/S1352465818000267

63. Cnaan A, Laird NM, Slasor P. Using the General Linear Mixed Model to Analyse Unbalanced Repeated Measures and Longitudinal Data. *Stat Med*. 1997;16:2349-2380.

64. National Research Council. *The Prevention and Treatment of Missing Data in Clinical Trials*. National Academies Press; 2010. doi:10.17226/12955

65. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. Elsevier Science & Technology; 1988.

66. Minami T, Serlin RC, Wampold BE, Kircher JC, Brown GS. Using clinical trials to benchmark effects produced in clinical practice. *Qual Quant*. 2008;42(4):513-525. doi:10.1007/s11135-006-9057-z

67. Powers MB, Sigmarsson SR, Emmelkamp PMG. A Meta-Analytic Review of Psychological Treatments for Social Anxiety Disorder. *Int J Cogn Ther*. 2008;1:94-113.

68. Fedoroff IC, Taylor S. Psychological and pharmacological treatments of social phobia: A meta-analysis. *J Clin Psychopharmacol*. 2001;21(3):311-324. doi:10.1097/00004714-200106000-00011

69. Nilsson JE, Lundh LG, Viborg G. Imagery rescripting of early memories in social anxiety disorder: An experimental study. *Behaviour Research and Therapy*. 2012;50(6):387-392. doi:10.1016/j.brat.2012.03.004

70. Lee SW, Kwon JH. The efficacy of Imagery Rescripting (IR) for social phobia: A randomized controlled trial. *J Behav Ther Exp Psychiatry*. 2013;44(4):351-360. doi:10.1016/j.jbtep.2013.03.001

71. Reimer SG, Moscovitch DA. The impact of imagery rescripting on memory appraisals and core beliefs in social anxiety disorder. *Behaviour Research and Therapy*. 2015;75:48-59. doi:10.1016/j.brat.2015.10.007

72. Wootton BM, Karin E, Dear BF, et al. Internet-delivered cognitive-behaviour therapy (ICBT) for obsessive-compulsive disorder when delivered as routine clinical care: A phase IV clinical trial. *J Anxiety Disord*. 2021;82. doi:10.1016/j.janxdis.2021.102444

73. Wootton BM, Steinman SA, Czerniawski A, et al. An Evaluation of the Effectiveness of a Transdiagnostic Bibliotherapy Program for Anxiety and Related Disorders: Results From Two Studies Using a Benchmarking Approach. *Cognit Ther Res*. 2018;42(5):565-580. doi:10.1007/s10608-018-9921-x

74. McEvoy PM, Nathan P, Rapee RM, Campbell BNC. Cognitive behavioural group therapy for social phobia: Evidence of transportability to community clinics. *Behaviour Research and Therapy*. 2012;50(4):258-265. doi:10.1016/j.brat.2012.01.009

75. McEvoy PM, Saulsman LM. Imagery-enhanced cognitive behavioural group therapy for social anxiety disorder: A pilot study. *Behaviour Research and Therapy*. 2014;55(1):1-6. doi:10.1016/j.brat.2014.01.006

76. Jacobson NS, Truax P. Clinical Significance: A Statistical Approach to Denning Meaningful Change in Psychotherapy Research. *Journal of Consulting and Clinical Psychologv*. 1991;59(1):12-19.

77. Clark DM, Ehlers A, Hackmann A, et al. Cognitive therapy versus exposure and applied relaxation in social phobia: A randomized controlled trial. *J Consult Clin Psychol*. 2006;74(3):568-578. doi:10.1037/0022-006X.74.3.568

78. Olfson M, Guardino M, Streuning E, Schneier F, Hellman F, Klein DF. Barriers to the Treatment of Social Anxiety. *American Journal of Psychiatry*. 2000;157(4):521-527. doi:10.1176/appi.ajp.157.4.521

79. Goetter EM, Frumkin MR, Palitz SA, et al. Barriers to mental health treatment among individuals with social anxiety disorder and generalized anxiety disorder. *Psychol Serv*. 2020;17(1):5-12. doi:10.1037/ser0000254