ClinicalTrials.gov: NCT04850989

Unique Protocol ID: STUDY00010344

Efficacy of Virtual Reality Exposure Therapy Scripts for Social Phobia

Date: August 07, 2020

CONSENT FOR RESEARCH
The Pennsylvania State University

Title of Project: Efficacy of Using Real-Life Footage in Virtual Reality Exposure Therapy for Social Anxiety Disorder

Principal Investigator:

Michelle G. Newman, PhD

Address: 371 Moore Building
Pennsylvania State University
State College, 16802-3103

Telephone Number: (814) 863-1148

Subject's Printed Name: _____

We are asking you to be in a research study. This form gives you information about the research.

Whether or not you take part is up to you. You can choose not to take part. You can agree to take part and later change your mind. Your decision will not be held against you.

Please ask questions about anything that is unclear to you and take your time to make your choice.

1. Why is this research study being done?

You are part of this study because you expressed interest in getting help for your social anxiety. This research is conducted to test if virtual reality technology is effective to help people face their social fears and promote the use of adaptive social skills in various settings. You will be immersed in a range of virtual reality environments and work with a research therapist to learn certain skills, such as managing fears of negative evaluation during job interviews, and interacting with peers in common social settings (e.g., classrooms, cafeterias).

Approximately 300 people will take part in this research study at the Pennsylvania State University, University Park campus.

2. What will happen in this research study?

You will attend a series of sessions for the purposes of conducting the initial assessment, treatment planning, assessing and adjusting treatment, as well as termination of treatment. Note that all treatment conducted in this study by the research therapist will be supervised by a licensed mental health provider and advanced clinical psychology graduate student. As such, each therapy session will be videotaped for quality treatment assurance and research purposes.

Here is an overview of the activities you will undergo in this research study:

- **Step 1: Initial Assessment (approximately 140 minutes)**
  - Complete a battery of self-report questionnaires.
  - A video-recorded clinical interview by research personnel to examine your study eligibility.
  - Assessment of your interest in the type of intervention you are willing to engage in.
  - If you are eligible for the study, you will be randomly assigned to either the immediate treatment or waitlist control condition.

After the baseline assessment visit, if you are eligible to continue in the research, you will go through the following procedures:

- **Step 2: Treatment Planning and Process**
  - If you are allocated to the experimental condition, you will begin the virtual reality treatment soon after with a research therapist and do the following:
    - An initial planning session to discuss your goals.
    - Attend the 50-minute virtual reality treatment weekly for 8-10 sessions.
    - **Duration: approximately 50 x 10 = 500 minutes.**
  - Research therapist will tailor your presenting problems to the treatment plan and process.
  - If you are assigned to the waitlist control condition, you will begin the virtual reality treatment in about 8 weeks.

- **Step 3: Assessing and Adjusting Treatment**
  - Complete the System Usability Scale questionnaire on the 1st, 4th, and last session.
  - Give feedback on the degree to which you find this treatment to be helpful.
  - Identify if there is a need to discontinue due to side effects (e.g., severe cybersickness).
  - Work with the research therapist to personalize the process to meet your needs.

- **Step 4: Between-Session Symptom Adjustment (approximately 15 minutes)**
  - Complete between-session symptom assessments at regular intervals to monitor progress.
  - All participants assigned to either conditions will be completing this step.
  - There will also be between-session homework to practice the skills you are learning in treatment so that you benefit from using these skills in your daily experience.

- **Step 5: Termination**
  - Work with the research therapist to determine treatment goals and monitor progress.

- **Step 6: Final Assessments at the 3-month and 6-month time points after treatment termination**
  - Complete self-report measures either at the clinic or by phone based on preference.

If any symptoms, feelings or thoughts arise that you would like to address with another mental health professional, feel free to call the Penn State Psychological Clinic at (814) 865-2191, Penn State Counseling and Psychological Services (CAPS) at (814) 863-0395, or the crisis intervention hotline, Center County Can Help at (800) 643-5432 to set up an appointment.

3. What are the risks and possible discomforts from being in this research study?

This study is of minimal risk to those participating, yet participants may experience discomfort. You may feel distress with respect to the sensitivity of some of the questions being asked, but we wish to reiterate that you may decline to respond or discontinue at any time. There is a risk of loss of confidentiality if your information or your identity is obtained by someone other than the investigators, but precautions will be taken to prevent this from happening. The confidentiality of your electronic data created by you or by the researchers will be maintained to the degree permitted by the technology used. Absolute confidentiality cannot be guaranteed. Due to the nature of virtual reality, there is

potential for users to develop dizziness and physical symptoms associated with being immersed in a virtual environment. The risks involved in the assessment and therapy procedures are no more than those involved in other therapy settings.

4. What are the possible benefits from being in this research study?

4a. What are the possible benefits to you?

Possible benefits include learning to better understand your mental health concerns, equipping yourself with coping skills, reducing isolation from others, and reaching other individual goals set in conjunction with your study therapist. You may also experience some occupational success as you learn to better manage your job interview phobia and general social fears. To this end, this treatment aims to help you to effectively use the skills learned to succeed in interviews and other common social settings encountered in daily life.

4b. What are the possible benefits to others?

The field of psychology lags behind other disciplines with regard to incorporating technology into practice. This study will help to move the field forward by examining how technology can be incorporated to existing treatments. It is the plan of the researchers to use the results of this study to help establish best practices for including technology into therapy and to identify more specific research questions for future study.

5. What other options are available instead of being in this research study?

You may decide not to participate in this research.

6. How long will you take part in this research study?

If you agree to take part, the whole study takes about 6 months, including follow-up assessments (approximately a total of 600 minutes or 10 hours). You will be asked to return to the research site about 12 times.

7. How will your privacy and confidentiality be protected if you decide to take part in this research study?

Efforts will be made to limit the use and sharing of your personal research information to people who have a need to review this information. A list that matches your name with your code number and other identifying information, including the videotaped initial clinical interview and weekly therapy sessions, will be kept in secure and encrypted files and servers at the Pennsylvania State University, University Park Campus. Only the study team members have access to these files. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

We will do our best to keep your participation in this research study confidential to the extent permitted by law. However, it is possible that other people may find out about your participation in this research study. For example, the following people/groups may check and copy records about this research:

- The Office for Human Research Protections in the U. S. Department of Health and Human Services;
- The Institutional Review Board (a committee that reviews and approves research studies);
- The Office for Research Protections;
- Food and Drug Administration (FDA);

- Family Educational Rights and Privacy Act (FERPA);
- Health Insurance Portability and Accountability Act (HIPAA).

Some of these records could contain information that personally identifies you. Reasonable efforts will be made to keep the personal information in your research record private. However, absolute confidentiality cannot be guaranteed.

8. What are the costs of taking part in this research study?

8a. What will you have to pay for if you take part in this research study?

There are no economic costs for subjects in this study. Subject "costs" merely includes their time investment.

8b. What happens if you are injured as a result of taking part in this research study?

There are no foreseeable risks of physical injury in this treatment study. Despite the discomfort this may cause, this risk remains minimal as the procedures involved in the study are similar to those that individuals would encounter when engaging in any other mental health treatment.

9. Will you be paid or receive credit to take part in this research study?

If you are eligible for the treatment, you will be compensated up to $40 based on the degree to which you complete the research in the following way: You will be compensated $10 in cash after completing the initial assessment; $15 in cash for completing the post-study assessment which follows the 8-10 sessions of therapy; and $15 in cash for completing the three-month follow-up assessment.

10. Who is paying for this research study?

This study is funded by an Industry Sponsor, LIMBIX, Inc. (Grant Title: The use of Virtual Social Interactions to Treat Anxiety Disorders).

11. What are your rights if you take part in this research study?

Taking part in this research study is voluntary.

- You do not have to be in this research.
- If you choose to be in this research, you have the right to stop at any time.
- If you decide not to be in this research or if you decide to stop at a later date, there will be no penalty or loss of benefits to which you are entitled.

You may be asked to stop participating in this study if you present with the following events:

- If you no-show to 4 sessions in a row or 6+ sessions in a 2-month period.
- If your symptoms increase to the point that more intensive care than can be provided through this study is required. This includes needing multiple sessions a week or an increase in suicidal ideation or self-harm behavior that necessitates hospitalization.

In the unlikely scenario that this happens, we ask that you contact the Centre County Community Care Behavioral Health Organization at 1 (866) 878-6046 to uncover other appropriate behavioral health treatment services you can access.

12. If you have questions or concerns about this research study, whom should you call?

Please call the head of the research study (principal investigator), Dr. Michelle Newman at (814) 863-1148 or Hani Zainal at (814) 863-0115 if you:

- Have questions, complaints or concerns about the research.
- Believe you may have been harmed by being in the research study.

You may also contact the Office for Research Protections at (814) 865-1775, ORProtections@psu.edu if you:

- Have questions regarding your rights as a person in a research study.
- Have concerns or general questions about the research.
- You may also call this number if you cannot reach the research team or wish to offer input or to talk to someone else about any concerns related to the research.

INFORMED CONSENT TO TAKE PART IN RESEARCH

SIGNATURE OF PERSON OBTAINING INFORMED CONSENT

Your signature below means that you have explained the research to the subject or subject representative and have answered any questions he/she has about the research.

_____	_____	_____
Signature of person who explained this research	Date	Printed Name

(Only approved investigators for this research may explain the research and obtain informed consent.)

Signature of Person Giving Informed Consent

Before making the decision about being in this research you should have:

- Discussed this research study with an investigator,
- Read the information in this form, and
- Had the opportunity to ask any questions you may have.

Your signature below means that you have received this information, have asked the questions you currently have about the research and those questions have been answered. You will receive a copy of the signed and dated form to keep for future reference.

SIGNATURE OF SUBJECT

By signing this consent form, you indicate that you voluntarily choose to be in this research and agree to allow your information to be used and shared as described above.

_____	_____	_____
Signature of Subject	Date	Printed Name

HRP-591 - Protocol for Human Subject Research

Protocol Title:

Provide the full title of the study as listed in item 1 on the "Basic Information" page in CATS IRB (http://irb.psu.edu).

Efficacy of Using Real-Life Footage in Virtual Reality Exposure Therapy for Social Anxiety Disorder

Principal Investigator:

Name: Michelle G. Newman, PhD
Department: Psychology
Telephone: (814) 863-1148
E-mail Address: mgn1@psu.edu

Version Date:

Provide the date of this submission. This date must be updated each time the submission is provided to the IRB office with revisions.

Version 5 (Saturday, December 8, 2018)

Clinicaltrials.gov Registration #:

Provide the registration number for this study, if applicable.

Not Applicable

Important Instructions for Using This Protocol Template:

1. Add this completed protocol template to your study in CATS IRB (http://irb.psu.edu) on the "Basic Information" page, item 7.
2. This template is provided to help investigators prepare a protocol that includes the necessary information needed by the IRB to determine whether a study meets all applicable criteria for approval.
3. **Type your protocol responses below the gray instructional boxes of guidance language. If the section or item is not applicable, indicate not applicable.**
4. **For research being conducted at Penn State Hershey or by Penn State Hershey researchers only, delete the instructional boxes from the final version of the protocol prior to upload to CATS IRB (http://irb.psu.edu). For all other research, do not delete the instructional boxes from the final version of the protocol.**
5. When making revisions to this protocol as requested by the IRB, please follow the instructions outlined in the Study Submission Guide available in the Help Center in CATS IRB (http://irb.psu.edu) for using track changes.

If you need help…	
University Park and other campuses: Office for Research Protections Human Research Protection Program The 330 Building, Suite 205 University Park, PA 16802-7014 Phone: 814-865-1775 Fax: 814-863-8699 Email: irb-orp@psu.edu	**College of Medicine and Hershey Medical Center:** Human Participants Protection Office 90 Hope Drive, Mail Code A115, P.O. Box 855 Hershey, PA 17033 (Physical Office Location: Academic Support Building Room 1140) Phone: 717-531-5687 Fax number: 717-531-3937 Email: irb-hspo@psu.edu

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1.0 Objectives

22.1 Study Objectives

Describe the purpose, specific aims or objectives. State the hypotheses to be tested.

The purpose of this study is to test the efficacy virtual reality videos to facilitate exposure therapy in social anxiety disorder (SAD). The exposure therapy videos are the focus of this experiment. Essentially, we are testing the efficacy of the Virtual Reality Exposure Therapy (VRET) scripts (i.e., virtual scenarios, people, and interactions that we expose socially anxious people to). To this end, the goal of the current study is to help people with social anxiety overcome their phobias. Individuals who experience a difficult time building social relationships, accomplishing everyday tasks, or pursuing interviews can practice those same behaviors in a controlled environment.

The study hypotheses are as follows:

1. Virtual reality exposure therapy intervention (vs. waitlist control condition) is effective for treating SAD symptoms.
2. Participants who received the virtual reality exposure therapy will experience maintenance of treatment gains following 3-month and 6-month post-termination of treatment.
3. Users of the virtual reality exposure therapy will demonstrate high amounts of acceptability of the treatment.

22.2 Primary Study Endpoints

State the primary endpoints to be measured in the study. Clinical trials typically have a primary objective or endpoint. Additional objectives and endpoints are secondary. The endpoints (or outcomes), determined for each study subject, are the quantitative measurements required by the objectives. Measuring the selected endpoints is the goal of a trial (examples: response rate and survival).

To answer these questions, the proposed study will use both qualitative and quantitative methods. Qualitative methods will include a semi-structured interview at the end of the study to gather information on the participant's experience, as well as data collected throughout the therapy process. Quantitatively, the study proposes to use basic descriptive statistics to examine treatment outcomes and engagement with digital tools.

This exploratory study will answer the following questions:
1) Compared to the waitlist control condition, is the virtual reality exposure intervention more effective for treating symptoms of social anxiety disorder?
2) Are there higher treatment gains maintained over time among participants who receive the virtual reality exposure therapy compared to the waitlist control condition?

22.3 Secondary Study Endpoints

State the secondary endpoints to be measured in the study.

3) To what degree does presence in the virtual reality environment impact the efficacy of the VRET scripts?
4) How do users rate the acceptability of treatment delivered through virtual reality?

2.0 Background

2.1 Scientific Background and Gaps

Describe the scientific background and gaps in current knowledge.

Social Anxiety Disorder (SAD) has a lifetime prevalence of 12.1% in the U.S. population of adults (Kessler & Wang, 2008). According to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013), SAD is characterized by an intense fear of social and performance situations or the fear of acting in an embarrassing way due to apprehension about negative evaluation by others. This can lead to marked avoidance of routine situations such as going to the grocery store, making appointments, or socializing with others resulting in significant impairment. SAD may also affect individual's ability to succeed professionally. For individuals with job interview anxiety, it is well documented that high levels of anxiety may result in a low job interview score that negatively impacts an applicant's chances of getting hired (McCarthy & Goffin, 2004). Cook, Vance and Spector (2000) provided evidence that it is more likely for individuals with a high level of job interview anxiety to receive significantly lower performance ratings and less likely to be offered a second-round interview and subsequent job offer. As a result, individuals with job interview anxiety may experience significant vocational impairment even when they may display superior on-the-job performance. To meet the needs of this population, the gold standard for treatment is exposure therapy.

2.2 Previous Data

Describe any relevant preliminary data.

Exposure therapy is an evidence-based treatment for social anxiety that has been shown to effectively target the fears of negative evaluation that is characteristic of SAD (Emmelkamp, 2005). Despite rates of success, there are logistical barriers of exposure therapy that limit treatment acceptability and accessibility (Olatunji, Deacon, & Abramowitz, 2009). Therefore, there is opportunity for growth and innovation for exposure therapy to expand the reach of treatment.

Virtual reality has been shown to meet these increased demands. Through this technology, experimenters can control every variable presented in a given virtual social scenario, which is not feasible in the real world. Further, it is less cost prohibitive, as the user can virtually experience a large array of social situations, regardless of distance or financial means. Virtual reality exposure therapy (VRET) has been shown to be as effective, and in some cases marginally more effective, than real-life exposure therapy for anxiety disorders (Powers & Emmelkamp, 2008). Preliminary results from VRET studies have also been promising for treating social anxiety, with participants maintaining treatment gains at a one-year follow-up (Anderson et al., 2013).

2.3 Study Rationale

Provide the scientific rationale for the research.

There is a dearth of studies testing the efficacy of virtual reality exposure therapy scripts based on its level of realness. Our study attempts to fill this gap by making the interactions and scenes inside the virtual reality exposure therapy scripts as realistic to everyday encounters.

The goal of the current study is to leverage the capabilities of this virtual reality technology to create a more immersive experience in social exposures. Individuals who experience a difficult time building social relationships, accomplishing everyday tasks, or pursuing interviews can practice those same behaviors in a controlled environment. The current study allows for a high degree of researchers' control to effectively and repeatedly create "social mishap" exposures, which is generally not feasible in the real world. We are hopeful that this study will not only increase the accessibility and utility of social phobia treatment, but also contribute to the expanding evidence-base for digital mental health interventions.

This study will focus on the effectiveness of the exposure therapy scripts to help people with social phobia. Individuals will be excluded if their symptoms would be best treated in a different setting, if we

are not equipped to offer needed treatment, or if the person is not able or interested to participate in treatment.

3.0 Inclusion and Exclusion Criteria

Create a numbered list below in sections 3.1 and 3.2 of criteria participants must meet to be eligible for study enrollment (e.g., age, gender, diagnosis, etc.). Indicate specifically whether you will include any of the following vulnerable populations: (You may not include members of these populations as participants in your research unless you indicate this in your inclusion criteria.) Review the corresponding checklists to ensure that you have provided the necessary information.

- **Adults unable to consent**
  - Review "CHECKLIST: Cognitively Impaired Adults (HRP-417)" to ensure that you have provided sufficient information. HRP-417 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).
- **Individuals who are not yet adults (infants, children, teenagers)**
  - If the research involves persons who have not attained the legal age for consent to treatments or procedures involved in the research ("children"), review the "CHECKLIST: Children (HRP-416)" to ensure that you have provided sufficient information. HRP-416 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).
- **Pregnant women**
  - Review "CHECKLIST: Pregnant Women (HRP-412)" to ensure that you have provided sufficient information. HRP-412 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).
- **Prisoners**
  - Review "CHECKLIST: Prisoners (HRP-415)" to ensure that you have provided sufficient information. HRP-415 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).
- **Neonates of uncertain viability or non-viable neonates**
  - Review "CHECKLIST: Neonates (HRP-413)" or "CHECKLIST: Neonates of Uncertain Viability (HRP-414)" to ensure that you have provide sufficient information. HRP-413 and HRP-414 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

3.1 Inclusion Criteria

List the criteria that define who will be included in your study.

1) Be at least 18 years old.
2) Meet criteria on the 15- to 25-minute MINI Neuropsychiatric Interview (Sheehan et al., 1997) for a social anxiety disorder.
3) Not psychotic via the MINI.
4) Not actively suicidal via the MINI (i.e. Participants who endorse suicidal intent and/or plan to commit suicide).
5) Not actively homicidal via a single question (i.e., "Have you had the urge to hurt someone else within the past two weeks?")
6) Not needing immediate medical attention for ongoing alcohol or substance use via the MINI.
7) Dual diagnoses apart from psychosis, alcohol or drug use disorders, are allowed.
8) Not judged to have severe mental illness better treated through broader mental health services that can be offered through our clinic (for example, individuals who require more than once-weekly sessions, individuals who require medical monitoring).
9) Able to read, write, and understand English.

3.2 Exclusion Criteria

List the criteria that define who will be excluded in your study.

1) Not interested in engaging in mental health treatment, or seeking mental health treatment for concerns unrelated to symptoms of social anxiety via two questions (i.e., "Are you currently interested in seeking mental health treatment to manage social anxiety symptoms better?" and "Are you currently interested in seeking mental health treatment to manage symptoms other than social anxiety?"
2) Individuals not meeting criteria on the MINI Neuropsychiatric Interview (Sheehan et al., 1997) for a social anxiety disorder.
3) Those who do not meet the inclusion criteria.

3.3 Early Withdrawal of Participants

3.3.1 Criteria for removal from study

Insert subject withdrawal criteria (e.g., safety reasons, failure of subject to adhere to protocol requirements, subject consent withdrawal, disease progression, etc.).

1. If a participant no-shows to 4 sessions in a row or 6+ sessions in a 2-month period.
2. If a participant's symptoms increase to the point that more intensive care than can be provided through this study is required.

3.3.2 Follow-up for withdrawn participants

Describe when and how to withdraw participants from the study; the type and timing of the data to be collected for withdrawal of participants; whether and how participants are to be replaced; the follow-up for participants withdrawn from investigational treatment.

Participants are free to withdraw from the study at any point in time. Data will be collected up to the point the participant expresses his/her wish to withdraw. If a subject withdraws from the study, we will not ask participants to continue with study procedures (post and follow-up assessments). Further, as per FDA regulations, we will not remove study data collected up to the point of withdrawal.

4.0 Recruitment Methods

4.1 Identification of participants

Describe the methods that will be used to identify potential participants or the source of the participants. If not recruiting participants directly (e.g., database query for eligible records or samples) state what will be queried, how and by whom.
StudyFinder: If you intend to use StudyFinder (http://studyfinder.psu.edu) for recruitment purposes, please indicate this in section 4.1 along with any other methods for identifying participants. Note that information provided in this protocol should be consistent with information provided on the StudyFinder page in your CATS IRB study.

For Penn State Hershey submissions using Enterprise Information Management (EIM) for recruitment, attach your EIM Design Specification form on the Basic Information page in CATS IRB (http://irb.psu.edu). See HRP-103 Investigator Manual, "What is appropriate for study recruitment?" for additional information.

For participants we are planning to recruit from the PSU subject pool, we will identify potential participants by using the Social Phobia Diagnostic Questionnaire ("LIMBIX – Screening – SPDQ") and the Beck Depression Inventory II ("LIMBIX – Screening – BDI-II"). Subject pool participants who screen positive (i.e., they scored >7.38 (85% specificity, sensitivity 82% (Bianca Lauria-Horner, 2016)) on the

SPDQ) and score above 20 on the BDI-II will be invited to an initial appointment to complete the baseline assessments and clinical interview.

For participants we are planning to recruit from the Penn State Psychological Clinic, we aim to reach out to potential clients with social anxiety disorder through these means: (1) Advertising our study at the adult clinic waiting room (see flyer attached at the Appendix); (2) Clients will contact us if they are interested in participating; (3) Therapists will raise awareness to potential clients about our study by giving them the flyer and letting the client contact us if they are interested in participating. Once a client has expressed interest, we will schedule the initial visit comprising baseline assessments to determine their study eligibility.

We also intend to recruit from StudyFinder and will ensure that the information written in this protocol is consistent with that provided on the StudyFinder page of our CATS IRB.

4.2 Recruitment process

Describe how, where and when potential participants will be recruited (e.g., approaching or providing information to potential participants for participation in this research study).

Participants will be identified through the current Pennsylvania State University Subject Pool, StudyFinder, and the Penn State Psychological Clinic.

For participants recruited from the subject pool, contact information will be obtained from the subject pool and participants will be contacted through email (refer to "LIMBIX - Subject Pool Email") and phone (refer to "LIMBIX - Screening Consent – Phone.docx") to be invited to participate in the study.

For participants recruited from the clinic, we will ask therapists to raise awareness of our study with a brief script (refer to "LIMBIX - Scripts - Therapists to Clients - V1.docx") that enables potential participants to contact us.

For participants recruited from Study Finder, we will use a distinct email (refer to "LIMBIX - StudyFinder Email").

Once a participant agrees to participate in this study after we do the pre-screening protocol, we will schedule for the in-person initial assessment session to determine whether or not the participant meets the study eligibility criteria. The participant will receive a hard copy of the informed consent form and will be given every opportunity to ask questions about the study along the way.

4.3 Recruitment materials

List the materials that will be used to recruit participants. Add recruitment documents to your study in CATS IRB (http://irb.psu.edu) on the "Consent Forms and Recruitment Materials" page. For advertisements, upload the final copy of printed advertisements. When advertisements are taped for broadcast, attach the final audio/video tape. You may submit the wording of the advertisement prior to taping to preclude re-taping because of inappropriate wording, provided the IRB reviews the final audio/video tape.

StudyFinder: If you intend to use StudyFinder (http://studyfinder.psu.edu) for recruitment purposes, you do not need to upload a separate recruitment document for information placed on the StudyFinder site to your study in CATS IRB. Necessary information will be captured on the StudyFinder page in your CATS IRB study.

i. Psych Subject Pool: email and phone script;

Potential subject pool participants will be reached out via email (“LIMBIX – Subject Pool Email”) and phone (“LIMBIX – Screening Consent - Phone.docx”).

ii. Psych Clinic: flyer, verbal script for therapist, phone script, email (this would be needed to send a copy of the consent form);
The therapist will approach the potential participant with a pre-defined script (“LIMBIX - Scripts - Therapists to Clients - V1.docx”).
The therapist will then give the advertisement (“LIMBIX - Clinic Study Ad.pdf”) and a copy of the consent form detailing the procedures of the study (“LIMBIX - Consent - In-Person Form - V2.docx”).
Additionally, a flyer advertising our study (“LIMBIX - Clinic Study Ad.pdf”) will be placed in the waiting room.
We will then live it up to the potential participant to contact us.

iii. StudyFinder – StudyFinder email
Participants who found our study via StudyFinder and expressed interest will contact us on our StudyFinder page in our CATS IRB study (refer to “LIMBIX – Study Finder Email”).

4.4 Eligibility/screening of participants

If potential participants will be asked eligibility questions before obtaining informed consent, describe the process. Add the script documents and a list of the eligibility questions that will be used to your study in CATS IRB (http://irb.psu.edu) on the “Consent Forms and Recruitment Materials” page.

StudyFinder: If you intend to use StudyFinder (http://studyfinder.psu.edu) for recruitment purposes, any scripts (phone, email, or other) used when contacting StudyFinder participants as well as any eligibility screening questions must be added to your study in CATS IRB (http://irb.psu.edu) on the “Consent Forms and Recruitment Materials” page.

Not applicable.

5.0 Consent Process and Documentation

Refer to “SOP: Informed Consent Process for Research (HRP-090)”, for information about the process of obtaining informed consent from participants. HRP-090 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

5.1 Consent Process

5.1.1 Obtaining Informed Consent

5.1.1.1 Timing and Location of Consent

Describe where and when the consent process will take place.

Participants will first be contacted by phone (see “LIMBIX – Screening Consent - Phone.docx”).

This initial assessment will take place within the research offices located at 378, 380, 348A, and 381 Moore as well as the therapy rooms at the Penn State Psychological Clinic (PSU University Park Campus). At the start of the initial in-person assessment session, the research therapist will present the written

consent form to the participant to ensure their understanding of the risks and benefits of the study.

5.1.1.2 Coercion or Undue Influence during Consent

Describe the steps that will be taken to minimize the possibility of coercion or undue influence in the consent process.

All study personnel will let clients know they are free to decline to participate and/or drop out of the study at any time. They will hand the consent form to the client and remain present while the client is reading it and let them ask any questions they may have after reading the form. Participants will personally read (and keep) a copy of the informed consent.

5.1.2 Waiver or alteration of the informed consent requirement

If you are requesting a waiver or alteration of consent (consent will not be obtained, required information will not be disclosed, or the research involves deception), describe the rationale for the request in this section. If the alteration is because of deception or incomplete disclosure, explain whether and how participants will be debriefed. Add any debriefing materials or document(s) to your study in CATS IRB (http://irb.psu.edu) on the "Supporting Documents" page. NOTE: Review the "CHECKLIST: Waiver or Alteration of Consent Process (HRP-410)" to ensure you have provided sufficient information for the IRB to make these determinations. HRP-410 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

Not applicable.

5.2 Consent Documentation

5.2.1 Written Documentation of Consent

Refer to "SOP: Written Documentation of Consent (HRP-091)" for information about the process to document the informed consent process in writing. HRP-091 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

If you will document consent in writing, describe how consent of the subject will be documented in writing. Add the consent document(s) to your study in CATS IRB (http://irb.psu.edu) on the "Consent Forms and Recruitment Materials" page. Links to Penn State's consent templates are available in the same location where they are uploaded and their use is required.

Participants, from the current PSU Subject Pool, Penn State Psychological Clinic, and StudyFinder will sign a copy of the written consent from which will be obtained by the research team and kept in a locked room in the PSU Moore Building, as well as receive a copy of the form to keep themselves. See "Consent Forms and Recruitment Materials" Section for documentation.

5.2.2 Waiver of Documentation of Consent (Implied consent, Verbal consent, etc.)

If you will obtain consent (verbal or implied), but not document consent in writing, describe how consent will be obtained. Add the consent script(s) and/or information sheet(s) to your study in CATS IRB (http://irb.psu.edu) on the "Consent Forms and Recruitment Materials" page. Links to Penn State's consent templates are available in the same location where they are uploaded and their use is required. Review "CHECKLIST: Waiver of Written Documentation of Consent (HRP-411)" to ensure that you have provided sufficient information. HRP-411 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

If your research presents no more than minimal risk of harm to participants and involves no procedures for which written documentation of consent is normally required outside of the research context, the IRB will generally waive the requirement to obtain written documentation of consent.

The research presents no more than minimal risk of harm to subjects and involves no procedures for which written documentation of consent is normally required outside of the research context.

5.3 Consent – Other Considerations

5.3.1 Non-English Speaking Participants

Indicate what language(s) other than English are understood by prospective participants or representatives.

If participants who do not speak English will be enrolled, describe the process to ensure that the oral and written information provided to those participants will be in that language. Indicate the language that will be used by those obtaining consent.

Indicate whether the consent process will be documented in writing with the long form of the consent documentation or with the short form of the consent documentation. Review the "SOP: Written Documentation of Consent (HRP-091)" and the "Investigator Manual (HRP-103)" to ensure that you have provided sufficient information. HRP-091 and HRP-103 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

Not applicable.

5.3.2 Cognitively Impaired Adults

Refer to "CHECKLIST: Cognitively Impaired Adults (HRP-417)" for information about research involving cognitively impaired adults as participants. HRP-417 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

5.3.2.1 Capability of Providing Consent

Describe the process to determine whether an individual is capable of consent.

Not applicable.

5.3.2.2 Adults Unable To Consent

Describe whether and how informed consent will be obtained from the legally authorized representative. Describe who will be allowed to provide informed consent. Describe the process used to determine these individual's authority to consent to research.

For research conducted in the state, review "SOP: Legally Authorized Representatives, Children and Guardians (HRP-013)" to be aware of which individuals in the state meet the definition of "legally authorized representative". HRP-013 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

For research conducted outside of the state, provide information that describes which individuals are authorized under applicable law to consent on behalf of a

prospective participant to their participation in the procedure(s) involved in this research. One method of obtaining this information is to have a legal counsel or authority review your protocol along with the definition of "children" in "SOP: Legally Authorized Representatives, Children, and Guardians (HRP-013)." HRP-013 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

Not applicable.

5.3.2.3 Assent of Adults Unable to Consent

Describe the process for assent of the participants. Indicate whether assent will be required of all, some or none of the participants. If some, indicate which participants will be required to assent and which will not.

If assent will not be obtained from some or all participants, provide an explanation of why not.

Describe whether assent of the participants will be documented and the process to document assent. The IRB allows the person obtaining assent to document assent on the consent document and does not routinely require assent documents and does not routinely require participants to sign assent documents.

Not applicable.

5.3.3 Participants who are not yet adults (infants, children, teenagers)

5.3.3.1 Parental Permission

Describe whether and how parental permission will be obtained. If permission will be obtained from individuals other than parents, describe who will be allowed to provide permission. Describe the process used to determine these individual's authority to consent to each child's general medical care.

For research conducted in the state, review "SOP: Legally Authorized Representatives, Children and Guardians (HRP-013)" to be aware of which individuals in the state meet the definition of "children". HRP-013 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

For research conducted outside of the state, provide information that describes which persons have not attained the legal age for consent to treatments or procedures involved in the research, under the applicable law of the jurisdiction in which research will be conducted. One method of obtaining this information is to have a legal counsel or authority review your protocol along with the definition of "children" in "SOP: Legally Authorized Representatives, Children, and Guardians (HRP-013)." HRP-013 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

Not applicable.

5.3.3.2 Assent of participants who are not yet adults

Indicate whether assent will be obtained from all, some, or none of the children. If assent will be obtained from some children, indicate which children will be

required to assent. When assent of children is obtained describe whether and how it will be documented.

As all participants are older than 18 years of age, assent will not be required from any of the participants.

6.0 HIPAA Research Authorization and/or Waiver or Alteration of Authorization

This section is about the access, use or disclosure of Protected Health Information (PHI). PHI is individually identifiable health information (i.e., health information containing one or more 18 identifiers) that is transmitted or maintained in any form or medium by a Covered Entity or its Business Associate. A Covered Entity is a health plan, a health care clearinghouse or health care provider who transmits health information in electronic form. See the "Investigator Manual (HRP-103)" for a list of the 18 identifiers. HRP-103 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

If requesting a waiver/alteration of HIPAA authorization, complete sections 6.2 and 6.3 in addition to section 6.1. The Privacy Rule permits waivers (or alterations) of authorization if the research meets certain conditions. Include only information that will be accessed with the waiver/alteration.

6.1 Authorization and/or Waiver or Alteration of Authorization for the Uses and Disclosures of PHI

Check all that apply:

☒ **Not applicable, no identifiable protected health information (PHI) is accessed, used or disclosed in this study.** *[Mark all parts of sections 6.2 and 6.3 as not applicable]*

☐ **Authorization will be obtained and documented as part of the consent process.** *[If this is the only box checked, mark sections 6.2 and 6.3 as not applicable]*

☐ **Partial waiver is requested for recruitment purposes only (Check this box if patients' medical records will be accessed to determine eligibility before consent/authorization has been obtained).** *[Complete all parts of sections 6.2 and 6.3]*

☐ **Full waiver is requested for entire research study (e.g., medical record review studies).** *[Complete all parts of sections 6.2 and 6.3]*

☐ **Alteration is requested to waive requirement for written documentation of authorization (verbal authorization will be obtained).** *[Complete all parts of sections 6.2 and 6.3]*

6.2 Waiver or Alteration of Authorization for the Uses and Disclosures of PHI

6.2.1 Access, use or disclosure of PHI representing no more than a minimal risk to the privacy of the individual

6.2.1.1 Plan to protect PHI from improper use or disclosure

Include the following statement as written – DO NOT ALTER OR DELETE unless this section is not applicable because the research does not involve a waiver of authorization. If the section is not applicable, remove the statement and indicate as not applicable.

Not applicable.

6.2.1.2 Plan to destroy identifiers or a justification for retaining identifiers

Describe the plan to destroy the identifiers at the earliest opportunity consistent with the conduct of the research. Include when and how identifiers will be destroyed. If identifiers will be retained, provide the legal, health or research justification for retaining the identifiers.

Not applicable.

6.2.2 Explanation for why the research could not practicably be conducted without access to and use of PHI

Provide an explanation for why the research could not practicably be conducted without access to and use of PHI.

Not applicable.

6.2.3 Explanation for why the research could not practicably be conducted without the waiver or alteration of authorization

Provide an explanation for why the research could not practicably be conducted without the waiver or alternation of authorization.

Not applicable.

6.3 Waiver or alteration of authorization statements of agreement

By submitting this study for review with a waiver of authorization, you agree to the following statement – DO NOT ALTER OR DELETE unless this section is not applicable because the research does not involve a waiver or alteration of authorization. If the section is not applicable, remove the statement and indicate as not applicable.

Not applicable.

7.0 Study Design and Procedures

7.1 Study Design

Describe and explain the study design.

We will compare exposure therapy via virtual reality technology to a waitlist control group across 8 to 10 sessions with follow-up assessments after 3-month and 6-month post-termination of treatment.

NOTE: While research procedures may be carried out in the Psych Clinic, no data will be entered into a medical record/student health record. Therefore, this data is strictly research data – it would not fall under the HIPAA or FERPA regulations.

Further, involvement in this study will not have any impact of participants' treatment options. Participants may seek other forms of professional mental healthcare elsewhere outside the context of clinical research during the course of this study.

7.2 Study Procedures

Provide a description of all research procedures being performed and when they are being performed (broken out by visit, if applicable), including procedures being performed to monitor participants for safety or minimize risks. Include any long-term follow-up procedures and data collection, if applicable.

Describe where or how you will be obtaining information about participants (e.g., medical records, school records, surveys, interview questions, focus group topics, audio or video recordings, data collection forms, and collection of specimens through invasive or non-invasive procedures to include the amount to be collected and how often). Add any data collection instruments that will be seen by participants to your study in CATS IRB (http://irb.psu.edu) in the "Supporting Documents" page.

Step 1: Phone Screening

Potential participants will first complete a brief phone screen to ensure they meet the basic criteria for the study. During the phone screen, the participant will be asked to provide a brief description of their presenting problem, as well as some basic information about their age to ensure they meet some of the inclusion criteria for the study (over the age of 18 and seeking help for social anxiety treatment). Researchers will administer the script before scheduling the initial assessment (see "LIMBIX – Screening Consent - Phone.docx" under recruitment materials).

Step 2: Initial Assessment

Those that appear to meet some of the criteria based on the phone screen will be scheduled for an in-person initial assessment. The waiting period between the initial phone screen and appointment for the baseline assessment will depend on the availability of the participant and study team member conducting the baseline assessment.

During the initial assessment visit, participants will review the study consent with a study team member ("LIMBIX - Baseline Assessment Script" done online). Once consent is obtained, participants will be instructed to complete the baseline self-report questionnaires using a tablet or computer in one of the clinic or laboratory rooms at the Moore building, which will link to the Qualtrics questionnaires. The self-report assessments will take approximately 40 minutes.

After self-report questionnaires are completed, participants will then complete the baseline clinical interview (paper version of "LIMBIX - Measure - MINI Neuropsychiatric Interview.pdf") conducted by a study team member who is not the ultimate research therapist. The clinical interview will generally take about 15 to 25 minutes. This interview will be videotaped to conduct reliability assessment on the diagnoses.

Participants who meet the study eligibility criteria will next be contacted by phone by another study team member within a week to receive their random assignment to either the virtual reality exposure therapy condition or the waitlist control condition and to schedule their treatment planning session Participants in the immediate treatment group will be invited to start treatment soon after the baseline assessments, whereas those in the waitlist control condition will be invited to start this treatment 8 weeks later. The script "LIMBIX - Scripts - Study Therapist to Subject" will be used to facilitate this process.

Within a day the intake assessor completes the initial assessment for an eligible participant, the coordinator will (1) randomly assign the eligible participant who had just completed the interview to their treatment condition, (2) call the participant to inform them of their study condition, and (3) inform their research therapist assigned to be in charge with conducting the 8 to 10 50-minute weekly treatment planning and therapy sessions.
As participants assigned to the treatment condition will begin therapy immediately, the coordinator will communicate this message to the research therapist within a day of the initial assessment.

On the other hand, participants assigned to the waitlist control condition will begin therapy 8 weeks later, and the coordinator will communicate this message within a few weeks after the initial assessment visit.

Once the research therapist receives the message from the coordinator to start scheduling treatment with a particular participant, he or she is expected to contact the participant and set up an appointment within the next one or two weeks depending on their availability.

Step 3: Treatment Planning

Once participants have been assigned their treatment condition and research therapist, they will be assessed for interest in beginning the specific job interview intervention or the general social settings intervention ("LIMBIX - Scripts - Treatment Selection - V1.docx"). Whereas the specific job interview intervention helps clients overcome their social phobia linked to job application situations, the general social settings interventions assists with helping clients overcome social fears across a variety of social situations (e.g., dating, ordering a cup of coffee at a cafeteria).

All treatment offered within the context of the study will be supervised by a licensed mental health provider and an advanced graduate student (Dr. Michelle Newman and Hani Zainal), and treatment options will be based on current best practices and available evidence-based care. Treatment will be based on exposure therapy, which has been shown through prior research to be effective for social anxiety disorder (Powers & Emmelkamp, 2008). In addition, therapy may focus on helping the participant to build a set of adaptive coping and emotion regulation skills, such as self-monitoring, breathing training, and enhancing motivation to take interpersonal risks.

The research therapist will determine if the intervention best matches the participant's presenting concerns and goals and will record this on the treatment plan. The VR treatment is tailored to participants' presenting problems (general social anxiety or job interview phobia). These plans will first be reviewed in supervision to ensure participants are offered treatment based on current best practices and standards of care. Treatment plans will also be reviewed with the participant to ensure agreement on the treatment plan and to allow for collaborative changes to the plan, as needed. Considerations such as the participant's digital literacy, comfort with technology, access to the tools, and participants' stated preferences will be considered.

Each 50-minute therapy session will be video recorded as part of the clinical supervision and research procedures to ensure that the research therapists adhere to the protocol of the virtual reality exposure therapy. The tapes will be coded by trained assessors to ensure quality of therapy and adherence. These videos will only be made available to the PI and study team members to maintain participants' confidentiality.

In each session, the participant will come in and be exposed to different social scenarios virtually. Each study team member follows a script for each session to direct them to the scenario ("LIMBIX - Scripts - Each Session - V1.docx"). The team member thus functions mainly as a facilitator who will ensure that the correct brief social scenario is presented to the participant for both the general social skills exposure therapy ("LIMBIX - Scripts - Phobia General Social Interactions.docx") and job interview exposure therapy ("LIMBIX - Scripts - Phobia Job Interview.docx"). Note that there are seven social scenarios for both forms of exposure therapy. The social scenarios build on each other in terms of the level of difficulty. Therefore, we will continue with the next scenario only after the participant says he or she feels ready to expose themselves to the next scenario. After each scenario, the study team member records participants' subjective units of distress using the "LIMBIX - In-session SUDS Ratings". Ten minutes before the 50-minute session ends, the team member assigns homework in between the

weekly sessions using a standard script ("LIMBIX – Between Session Homework"). Homework is meant to help participants generalize the skills they learn from this treatment to their everyday life situations.

Step 4: Assessing and Adjusting Treatment

We aim to ensure that each participant finds the intervention to be helpful and to identify the need to discontinue due to various reasons (e.g., participant finds the intervention is unhelpful, causes adverse side effects or severe cybersickness). Participants will thus complete the System Usability Scale on the first, fourth, and last week of the 8-10 session intervention. This will provide a measure of their experience and will help to facilitate a conversation with the therapist about their experience. Scores below a 70 (Bangor, Kortum, & Miller, 2009) would indicate that the usability of the tool was below average and will signify that further discussion is needed to identify if the use of the digital tool should be discontinued. Please note that efforts will be made to problem solve usability concerns with the participant when possible, as participants will have varying levels of technological comfort the therapist will work to personalize this process to the participants' needs.

During the session, some research personnel will assist with helping participants to respond if the participants have problems responding to the system ("LIMBIX - Scripts - RA Prompts If Participant Gets Stuck.docx").

Step 5: Between-Session Symptom Assessment

To monitor treatment progress, participants will complete between-session symptom assessments at the end of each session ("LIMBIX - Measure - Between session symptom assessments.pdf"). Participants will also be asked to engage in practice of skills they learn in treatment between sessions (refer to "LIMBIX – Between-Session Homework").

This applies to participants in the treatment, but not waitlist, condition. For participants placed on the waitlist, this applies only once treatment has started.

Step 6: Termination

The research therapist will work with participants to determine therapy goals at the start of treatment, and will work with them to monitor progress on these goals throughout treatment. Generally, treatment length will span 8 to 10 sessions, depending on the participant's symptoms, response to treatment, and therapists' clinical judgment.

Step 7: Final Assessments

Participants will be asked to complete the follow-up questionnaire packet (see "LIMBIX - Measure - Follow-up questionnaire packet.pdf"). This packet will be provided to them prior to their final session, and the final interview (conducted online "LIMBIX - Measure - Final interview.pdf") will be included in the termination session. The final interview session will be administered at the end of Session 10.

Three and six months after treatment, participants will be contacted online to complete the 3-month and 6-month follow-up questionnaires (see "LIMBIX - Measure - 3-month post-treatment.pdf" and "LIMBIX - Measure - 6-month post-treatment.pdf" accordingly). At this time, participants will only complete self-report measures online.

7.3 Duration of Participation

Describe the duration of an individual subject's participation in the study.

We determined the length of time needed to complete the assessments. Based on this, it is predicted that the baseline assessments will be completed in 90 minutes, and the assessments at the end of treatment and 3- and 6-month post should take between 30 minutes to complete. In addition to time spent on assessments, participants will attend 8 to 10 sessions of weekly therapy sessions that will each be 50 minutes long. Note that the between-session measures are done at the end of each session. The frequency of treatment sessions will be determined by the participant's presenting concerns, but the following presents a reasonable estimate for most clients with social anxiety disorder who meet the study eligibility criteria.

Initial visit assessments:	60 minutes
3- month post-treatment assessments:	15 minutes
6- month post-treatment assessments:	15 minutes
8-10 treatment sessions:	50 x 10 = 500 minutes
Final visit assessments:	10 minutes
Total time (approximate):	600 minutes

8.0 Participant Numbers and Statistical Plan

8.1 Number of Participants

Indicate the total number of participants to be accrued.

If applicable, distinguish between the number of participants who are expected to be enrolled and screened, and the number of participants needed to complete the research procedures (i.e., numbers of participants excluding screen failures.)

750 participants

8.2 Sample size determination

If applicable, provide a justification of the sample size outlined in section 8.1 – to include reflections on, or calculations of, the power of the study.

The proposed study is focused on examining the efficacy, acceptability, feasibility, and the experience of the patient when using virtual reality in treating job interview phobia. The number of participants (300 per intervention condition; 300 General Social Skills Training; 300 Job Interview Phobia; 150 Waitlist Control) was based on Kampmann et al. (2016) who conducted a virtual reality study with adults with social phobia and used similar primary outcome measures. In their study, their power calculations estimated that 300 participants/per intervention group would be sufficient to find significant differences (two sided-power, power= 80%, alpha -0.05, G*Power 3.2) based on an effect size of exposure therapy found in a meta-analysis (Powers et al., 2008).

8.3 Statistical methods

Describe the statistical methods (or non-statistical methods of analysis) that will be employed.

We will conduct a series of growth curve analyses to test for treatment efficacy. We will use the R packages 'lme4' (Bates, Maechler, & Bolker, 2012), 'lmerTest' (Kuznetsova & Brockhoff, 2014), and 'lavaan' (Rosseel, 2012) to calculate the growth trajectories for each participants. We will test for the impact of time using participants' scores at post-treatment, and at 6-month and 12-month follow-ups. We intend to perform separate models for each of the study outcome measures.

9.0 Confidentiality, Privacy and Data Management

For research being conducted at Penn State Hershey or by Penn State Hershey researchers only, the research data security and integrity plan is submitted using "HRP-598 – Research Data Plan Review Form Application Supplement", which is available in the Library in CATS IRB (http://irb.psu.edu). Refer to Penn State College of Medicine IRB's "Standard Operating Procedure Addendum: Security and Integrity of Human Research Data", which is available on the IRB's website. **In order to avoid redundancy, for this section state "See the Research Data Plan Review Form" in section 9.0 if you are conducting Penn State Hershey research and move on to section 10.**

For all other research, in the sections below, describe the steps that will be taken to secure the data during storage, use and transmission.

9.1 Confidentiality

9.1.1 Identifiers associated with data and/or specimens

List the identifiers that will be included or associated with the data and/or specimens in any way (e.g., names, addresses, telephone/fax numbers, email addresses, dates (date of birth, admission/discharge dates, etc.), medical record numbers, social security numbers, health plan beneficiary numbers, etc.).

If no identifiers will be included or associated with the data in any way, whether directly or indirectly, please indicate this instead.

The identifiers include code numbers "VRET001, VRET 002, … VRET 00X, etc." that will be linked with the participant's name and email address in a password-protected master list code only accessible to the PIs and study team members of this project.

To maintain confidentiality of video tapes recorded of the clinical interviews and for each therapy session, these tapes will be labeled with participant code numbers and session numbers (e.g., VRET001-Session 1, VRET001-Session 2, … VRET001-Session X). These tapes are also stored in a password protected, private, and secure PSU Box folder that is only available to the PIs and study team members of this project. This password protected server has a two-factor authentication feature for added security.

9.1.1.1 Use of Codes, Master List

If identifiers will be associated with the data and/or specimens (as indicated in section 9.1.1 above), describe whether a master record or list containing a code (i.e., code number, pseudonyms) will be used to separate the data collected from identifiable information, where that master code list will be stored, who will have access to the master code list, and when it will be destroyed.

If identifiers are included or associated with the data as described in section 9.1.1 above, but no master record or list containing a code will be used, it will be assumed by the IRB that the investigator plans to directly link the identifiers with the data.

The master code list will be stored in a secure and password protected server online using PSU Box at the Newman Lab, PSU University Park campus. Only Dr. Michelle Newman, Nur Hani Zainal, and trained study team members will have access to the master code list and therapy video tapes. We plan to destroy the master code list that it is stored in a password protected and secure server that

minimizes the risk of breaching participants' confidentiality after 5 years of completing the research study.

9.1.2 Storage of Data and/or Specimens

Describe where, how and for how long the data (hardcopy (paper) and/or electronic data) and/or specimens will be stored. NOTE: Data can include paper files, data on the internet or websites, computer files, audio/video files, photographs, etc. and should be considered in the responses. Refer to the "Investigator Manual (HRP-103)" for information about how long research records must be stored following the completion of the research prior to completing this section. HRP-103 can be accessed by clicking the Library link in CATS IRB (http://irb.psu.edu).

Please review Penn State's Data Categorization Project for detailed information regarding the appropriate and allowable storage of research data collected according to Penn State Policy AD71. Although the IRB can impose greater confidentiality/security requirements (particularly for sensitive data), the IRB cannot approve storage of research data in any way or using any service that is not permissible by Penn State Policy AD71.

Paper data:

Physical consent forms and MINI clinical interviews will be kept in a locked room in the Newman Laboratory (either rooms 378, 380, 348A, 348B, 348C, or 381 Moore) for a maximum period of 5 years. These consent forms will be stored separately from the study data.

Video recordings:

We will use the computer webcams installed on the College of Liberal Arts computers in the Moore building to ensure treatment fidelity. Once these videos have been recorded, the research personnel will immediately upload it onto the encrypted, secure, and password protected PSU Box folder and the webcam version will be deleted. Videos stored in the safe and encrypted PSU Box folder will be destroyed 5 years after the close of the study. The videos will not be transcribed.

Online data:

Based on the policies of AD 95 (https://policy.psu.edu/policies/ad95) and AD 53 (https://policy.psu.edu/policies/ad53), we will use moderate security control. We are planning to store data on Qualtrics for a maximum period of 5 years after the close of the study. The Qualtrics website is highly secure. All surveys hosted with Qualtrics are encrypted using 256-bit SSL Technology (Secure Socket Layer) that is equivalent to the industry standard for securely transmitting credit card information over the Internet. This technology encrypts BOTH the questions displayed to the participants and their responses. Thus, all responses are instantly encrypted and remain so until they are received at the Qualtrics database. Interception of data when it is being transmitted between the Internet browser (i.e., Internet Explorer, FireFox, Safari, Chrome) and the Qualtrics database is HIGHLY unlikely (consider the motivations of a person attempting to intercept research data over the internet vs. papers stored in an office vs. credit card information). However, should interception of encrypted data occur, that data could not be decoded without the unique encryption key that is held.

Once research data is stored on a Qualtrics server, it is held in an isolated database that can only be accessed by a researcher with the correct username and password. Qualtrics employees do NOT examine customer data unless requested to do so by the account owner; additionally,

those employees are trained in the ethics of research involving human subjects. Servers are housed in a secure data facility and are monitored 24 hours-per-day and 7 days-per-week by network operations personnel for all aspects of operational security. Biometric/intrusion sensors, card readers, personal identification numbers, and environmental sensors are used to ensure server integrity and safety. Redundant HVAC systems ensure an optimized operational environment. Server power is provided by a redundant, multi-stage, uninterruptible system. Even in the event of a catastrophic commercial power failure, diesel generators seamlessly provide backup power. A redundant, high-bandwidth, private transport network provides connectivity between our servers and the world. The local fiber connectivity is redundant with three fiber rings with dual entry points from Optical Carrier-12 (OC-12) hardware. This network has demonstrated 99.999% availability, which means that the network will be down no more than 5 minutes in one year. Qualtrics allows you to link two surveys together. Therefore, identifying information about participants and research data can be collected, stored, and accessed separately. If you need to collect identifying information at the same time you are collecting anonymous research data this method is, by far, the safest.

9.1.3 Access to Data and/or Specimens

Identify who will have access to the data and/or specimens. This information should not conflict with information provided in section 9.1.1.1 regarding who has access to identifiable information, if applicable.

Only Dr. Michelle Newman, Nur Hani Zainal, and trained study team members (i.e., research assistants) included on this IRB protocol will have access to data on the encrypted PSU Box folders.

9.1.4 Transferring Data and/or Specimens

If the data and/or specimens will be transferred to and/or from outside collaborators, identify the collaborator to whom the data and/or specimens will be transferred and how the data and/or specimens will be transferred. This information should not conflict with information provided in section 9.1.1.1 regarding who has access to identifiable information, if applicable.

Not Applicable.

9.2 Subject Privacy

This section must address subject privacy and NOT data confidentiality.

Indicate how the research team is permitted to access any sources of information about the participants.

Describe the steps that will be taken to protect participants' privacy interests. "Privacy interest" refers to a person's desire to place limits on whom they interact with or to whom they provide personal information.

Describe what steps you will take to make the participants feel at ease with the research situation in terms of the questions being asked and the procedures being performed. "At ease" does not refer to physical discomfort, but the sense of intrusiveness a subject might experience in response to questions, examinations, and procedures.

All investigators will be asked to be aware of participant comfort and participants will be encouraged to ask questions or state concerns regarding privacy. Both prescreening measures and study procedures are designed to (and will be implemented in such a way that) preserves participant privacy. Phone calls and experimental sessions will take place in private rooms in the Moore building where participants can be

assured that the privacy of their information will not be compromised. Overall, participants will be able to address privacy concerns or questions at any time throughout the study by emailing or calling Nur Hani Zainal at 814-863-0115.

10.0 Data and Safety Monitoring Plan

This section is required when research involves more than Minimal Risk to participants. As defined in "SOP: Definitions (HRP-001)", available in the Library in CATS IRB (http://irb.psu.edu), Minimal Risk is defined as the probability and magnitude of harm or discomfort anticipated in the research that are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. For research involving prisoners, Minimal Risk is the probability and magnitude of physical or psychological harm that is normally encountered in the daily lives, or in the routine medical, dental, or psychological examination of healthy persons. **Please complete the sections below if the research involves more than minimal risk to participants OR indicate as not applicable.**

10.1 Periodic evaluation of data

Describe the plan to periodically evaluate the data collected regarding both harms and benefits to determine whether participants remain safe.

Not Applicable.

10.2 Data that are reviewed

Describe the data that are reviewed, including safety data, untoward events, and efficacy data.

Not Applicable.

10.3 Method of collection of safety information

Describe the method by which the safety information will be collected (e.g., with case report forms, at study visits, by telephone calls and with participants).

Not Applicable.

10.4 Frequency of data collection

Describe the frequency of data collection, including when safety data collection starts.

Not Applicable.

10.5 Individuals reviewing the data

Identify the individuals who will review the data. The plan might include establishing a data and safety monitoring committee and a plan for reporting data monitoring committee findings to the IRB and the sponsor.

Not Applicable.

10.6 Frequency of review of cumulative data

Describe the frequency or periodicity of review of cumulative data.

Not Applicable.

10.7 Statistical tests

Describe the statistical tests for analyzing the safety data to determine whether harms are occurring.

Not Applicable.

10.8 Suspension of research

Describe any conditions that trigger an immediate suspension of research.

Not Applicable.

11.0 Risks

List the reasonably foreseeable risks, discomforts, hazards, or inconveniences to the participants related the participants' participation in the research. For each potential risk, describe the probability, magnitude, duration, and reversibility. Consider all types of risk including physical, psychological, social, legal, and economic risks. If applicable, indicate which procedures may have risks to the participants that are currently unforeseeable. If applicable, indicate which procedures may have risks to an embryo or fetus should the subject be or become pregnant. If applicable, describe risks to others who are not participants.

Please keep in mind that loss of confidentiality is a potential risk when conducting human subject research and should be addressed as such.

Possible risks:

In the assessment process, it is possible that participants may experience some distress as they are reminded of difficult memories, asked to answer personal questions, and asked about past and current symptoms. In counseling, the process of therapy may increase distress over the short term, especially as the counseling provided in this study involves exposure to elicited anxiety around feared stimuli. The risks involved in the assessment and therapy procedures are no more than those involved in other therapy settings.

The responses to questions concerning illegal drug use could be self-incriminating and harmful if they became known outside the study. Precautions will be taken to ensure the safety and security of participant's personal information.

It is also possible that participants experience physical distress, including muscle tension, upset stomach, or other somatic symptoms associated with anxiety and arousal. The risks involved in the assessment and therapy procedures are no more than those involved in other therapy settings.

Due to the nature of virtual reality, there is potential for users to develop cybersickness. Cybersickness involves users feeling some dizziness, abdominal symptoms as a result of using virtual reality. However, the time within the virtual reality world in our study has been adapted (*under 40 mins per use*) to reduce eye strain and cybersickness (Bouchard, Loranger, Robillard, & Larouche, 2012). None of the participants in Bouchard and Wiederhold (2009) had to stop the immersion due to negative side effects. For 92% of the 157 adult users, the intensity of symptoms was rated as "slight".

The design of the virtual reality scripts has minimal unnecessary movement of the user within the virtual reality space, which is a high predictor for inducing cybersickness and, hence, limits the likelihood of users developing cybersickness.

Additionally, there is social stigma attached to individuals who have a history of mental health diagnoses. Given this, precautions will be taken to ensure the safety and security of subject's personal information.

For risks associated with mental health or physical discomfort the following precautions will be taken:

- Participants will be informed of these risks in advance.
- As part of treatment, participants will gain coping skills to better manage the distressing symptoms.
- Treatment and assessments will be provided by doctoral students who have training in mental health treatment, and who can provide support to research participants.
- Research therapists involved in the study will be supervised by a licensed psychologist or advanced graduate student therapist who can provide additional oversight and resources to either the research therapist or participant to ensure participants are getting appropriate treatment.
- Each treatment session will be under 40 mins to minimize the likelihood of a user developing cybersickness.
- Unwanted side effects of cybersickness are monitored using a well-established instrument (Simulator Sickness Questionnaire [SSQ]; Kennedy, Lane, Berbaum, & Lilienthal, 1993). If a user reports significant cybersickness, research therapist will problem solve with the user. If continuous cybersickness is reported, the user may not be a good fit for the intervention.

For risks related to disclosure of information outside of the study, the following precautions will be taken:

- Participants will be informed of these risks in advance.
- All necessary steps, as dictated by law and the American Psychological Association ethics code will be followed to ensure the safety of participant's data.
- Only individuals who are directly involved with the research project will have access to the research information.

Why this study is of minimal risk:

Participants involved in this study will be asked to discuss difficult topics including current symptoms, past trauma, substance use, and psychiatric history. Despite the discomfort this may cause, this risk remains minimal as the procedures involved in the study are similar to those that individuals would encounter when engaging in any other mental health treatment.

Circumstances under which the study will be ended to prevent future risk:

The study will be ended if the protocol is shown to cause unnecessary harm to participants without any compensatory benefit. The Beck Anxiety Inventory (BAI; Beck & Steer, 1993) will be used to assess changes in symptoms every week. If no response, or negative response, (as operationalized as a 15% increase in severity on BAI scores for two consecutive sessions after initial adjustment to treatment has been made) continues for at least 5 participants, or if at least 5 participants are referred out due to requiring more care, the study will be stopped. This figure was chosen as controlled studies of single-diagnosis treatment trials often show that 5-10% of the study populations may exhibit an increase in symptoms while participating in a therapy study and 35- 40% report little benefit (Hansen, Lambert, & Forman, 2002). Given that the community population served by this study may be more complex than the populations seen in clinical trials the number was slightly increased.

It is expected that some participants will see a temporary increase in symptoms over the course of treatment due to the need to discuss difficult emotional information in treatment. To help ensure that any of the participant's concerns are addressed and that the treatment offered is responsive to the participant's needs, ongoing symptom monitoring will assist with the identification of individuals who do not appear to be benefiting from treatment and adverse effects will also be monitored through the assessment process (i.e., through the use of the Negative Effects Questionnaire; Rozental, Kottorp, Boettcher, Andersson, & Carlbring, 2016). This monitoring will also allow for a collaborative discussion with study participants so that adjustments can be made in their treatment as needed. If an individual participant becomes an imminent risk to themselves or others, their participation in the study will end and they will be referred to an appropriate level of care. We will ask such

participants to contact the Centre County Community Care Behavioral Health Organization at 1 (866) 878-6046 to uncover other appropriate behavioral health treatment services they can access.

12.0 Potential Benefits to Participants and Others

12.1 Potential Benefits to Participants

Describe the potential benefits that individual participants may experience from taking part in the research. If there is no direct benefit to participants, indicate as such. Compensation is not considered a benefit. Compensation should be addressed in section 14.0.

Participants may experience some benefits from participation, this includes learning to better understand their mental health concerns, learning more about coping, reducing isolation from others, and reaching other individual goals set through with their research therapist.

Participants may also experience some occupational success as they learn to better manage their job interview phobia and access the skills they have to succeed in job interviews. The treatment is aimed to target reducing job interview phobia, one of the potential obstacles to occupational attainment and advancement.

Social anxiety has been linked to difficulties at work or in school and in social or romantic relationships. Therefore, a benefit of treating social interaction anxiety may be an increase in quality of life as individuals can more comfortably engage in daily situations in their personal and professional lives. A second benefit may be an increase in self-esteem. Social anxiety is also highly comorbid with depression. Therefore, treating the underlying source of distress that is rooted in social phobia may also yield additional gains when addressing multiple diagnoses.

12.2 Potential Benefits to Others

Include benefits to society or others.

The field of psychology lags behind many other disciplines with regard to incorporating technology into practice. This study will help to move the field forward by examining how technology can be incorporated to supplement existing treatments. It is the plan of the researchers to use the results of this study to help establish best practices for including technology into therapy and to identify more specific research questions for future study.

13.0 Sharing Results with Participants

Describe whether results (study results or individual participant results, such as results of investigational diagnostic tests, genetic tests, or incidental findings) will be shared with participants or others (e.g., the participant's primary care physicians) and if so, describe how it will be shared.

Not Applicable.

14.0 Subject Stipend (Compensation) and/or Travel Reimbursements

Describe the amount and timing of any subject stipend/payment or travel reimbursement here. If there is no subject stipend/payment or travel reimbursement, indicate as not applicable.

If course credit or extra credit is offered to participants, describe the amount of credit and the available alternatives. Alternatives should be equal in time and effort to the amount of course or extra credit offered.

If an existing, approved student subject pool will be used to enroll participants, please indicate as such and indicate that course credit will be given and alternatives will be offered as per the approved subject pool procedures.

The following compensation mechanism will be used for all participants: Participants will be awarded a $40 gift card which will be reimbursed online via email within a week after they have completed the measures at 6-month follow-up. The planned payment is appropriate and mutually beneficial. It maximizes the chances that participants will engage fully with treatment to benefit themselves and complete all of the study procedures. Participants are expected to spend about 10 hours to complete the assessment batteries and therapy sessions. The money is reasonable in compensating their time. However, given that they are also receiving free treatment, we do not compensate them for time spent in therapy or homework from therapy. Further, this amount is not expected to cause undue coercion on the prospective research participants to partake in the study.

15.0 Economic Burden to Participants

15.1 Costs

Describe any costs that participants may be responsible for because of participation in the research.

There are no economic costs for participants in this study. Participant "costs" merely includes their time of investment and thought.

15.2 Compensation for research-related injury

If the research involves more than Minimal Risk to participants, describe the available compensation in the event of research related injury.

If there is no sponsor agreement that addresses compensation for medical care for research participants with a research-related injury, include the following text as written - DO NOT ALTER OR DELETE:
It is the policy of the institution to provide neither financial compensation nor free medical treatment for research-related injury. In the event of injury resulting from this research, medical treatment is available but will be provided at the usual charge. Costs for the treatment of research-related injuries will be charged to participants or their insurance carriers.

For sponsored research studies with a research agreement with the sponsor that addresses compensation for medical care for research-related injuries, include the following text as written - DO NOT ALTER OR DELETE:
It is the policy of the institution to provide neither financial compensation nor free medical treatment for research-related injury. In the event of injury resulting from this research, medical treatment is available but will be provided at the usual charge. Such charges may be paid by the study sponsor as outlined in the research agreement and explained in the consent form.

Not applicable.

16.0 Resources Available

16.1 Facilities and locations

Identify and describe the facilities, sites and locations where recruitment and study procedures will be performed.

If research will be conducted outside the United States, describe site-specific regulations or customs affecting the research, and describe the process for obtaining local ethical review. Also, describe the principal investigator's experience conducting research at these locations and familiarity with local culture.

Study participation and recruitment will occur in Dr. Newman's research lab [348B, 348C, 381, 380, 348A and 378 Moore Building] as well as the therapy rooms in the Psych Clinic [301-325 Moore Building] on Penn State University Park campus.

The Newman Laboratory for Anxiety and Depression Research as well as PSU Psychological Clinic therapy rooms, located in the Moore Building, includes seating, desk space, and computers where participants will undergo the consenting process and experiment. Some research personnel will also be seated in the room to guide participants through the study.

16.2 Feasibility of recruiting the required number of participants

Indicate the number of potential participants to which the study team has access. Indicate the percentage of those potential participants needed for recruitment.

During each semester, approximately 800 students are enrolled in the subject pool who are expected to accumulate up to 6 hours of research credits as a course requirement. We would thus have access to a large numbers of people who are willing and able to partake in the present study. The PSU Psychology Subject Pool is thus an abundant resource for the recruitment of study participants and many previous studies with larger social anxiety disorder samples have been conducted within this participant pool. It is feasible that the desired/required number of participants can be recruited based on previous experience with the subject pool. For the past two semesters of subject pool research over 200 students have met criteria for social anxiety disorder via the Social Phobia Diagnostic Questionnaire.

Further, the Penn State Psychological Clinic is the best place for conducting this study primarily because the data is relatively unique to the clinic. The clinic is a rural outpatient community mental health clinic and will provide information generalizable to an understudied segment of outpatient clients. Furthermore, the use of structured clinical interviews as part of routine practice as well as the Practice-Research Network (PRN) that has seamlessly been incorporated into the daily operations of the clinic allow the Psychological Clinic to provide both ecologically valid and empirically rigorous data (Castonguay, Locke, & Hayes, 2011). These data will therefore be reliably generalizable to both the research and clinical community, particularly the U.S. community mental health centers.

The StudyFinder which is customized and supported by the Pennsylvania State University Clinical and Translational Science Institute under grant UL1TR000127 is also another excellent resource to tap into. Participants from the community who have been struggling with high levels of social anxiety symptoms and tend to avoid multiple feared social situations experience less social and occupational opportunities in life. This research study offers such community adult participants the chance to break away from such avoidance patterns. To this end, interested participants via StudyFinder who identify with struggling with social anxiety are able receive diagnosis and treatment and thereby improve their quality of life.

16.3 PI Time devoted to conducting the research

Describe how the PI will ensure that a sufficient amount of time will be devoted to conducting and completing the research. Please consider outside responsibilities as well as other on-going research for which the PI is responsible.

This study's PI and project coordinator will devote all necessary research time to completing the study within the next eight semesters (August 2018 to August 2023). The active time burden for study personnel, working with participants before data analysis, does not appear to amount to more than 10

hours per participant, ideally. With 75 participants per semester, the time investment would be 45,000 hours per semester.

16.4 Availability of medical or psychological resources

Describe the availability of medical or psychological resources that participant might need as a result of their participation in the study, if applicable.

If desired, participants recruited from the subject pool may contact the Penn State Psychological Clinic at 814-865-2191 or Penn State Counseling and Psychological Services (CAPS) at 814-863-0395 for mental health services. Participants may also call the CAN Help phone line at 1-800-643-5432 after hours if necessary.

16.5 Process for informing Study Team

Describe the training plans to ensure members of the research team are informed about the protocol and their duties, if applicable.

The current study personnel have already been trained extensively in their duties. If a new individual joins the team, they will undergo a training session of approximately ten hours and—like everyone involved—will be monitored for adequate performance through the study's duration. They will be required to read this IRB protocol for the study, the informed consent, each of the measures, the proposal for the study, and will be given every opportunity to ask questions. They will be walked through the virtual reality exposure therapy assignments, as well as each step of the study. The security measures of the locked room and the computers will be addressed. Last, there will be 0.5 to 1-hour weekly meeting between all study members to address any ongoing issues and track progress.

17.0 Other Approvals

17.1 Other Approvals from External Entities

Describe any approvals that will be obtained prior to commencing the research (e.g., from cooperating institutions, community leaders, schools, external sites, funding agencies).

Not Applicable.

17.2 Internal PSU Committee Approvals

Not Applicable.

Check all that apply:

☐ Anatomic Pathology – Hershey only – Research involves the collection of tissues or use of pathologic specimens. Upload a copy of HRP-902 - Human Tissue For Research Form on the "Supporting Documents" page in CATS IRB. This form is available in the CATS IRB Library.

☐ Animal Care and Use – All campuses – Human research involves animals and humans or the use of human tissues in animals

☐ Biosafety – All campuses – Research involves biohazardous materials (human biological specimens in a PSU research lab, biological toxins, carcinogens, infectious agents, recombinant viruses or DNA or gene therapy).

☐ Clinical Laboratories – Hershey only – Collection, processing and/or storage of extra tubes of body fluid specimens for research purposes by the Clinical Laboratories; and/or use of body fluids that

had been collected for clinical purposes, but are no longer needed for clinical use. Upload a copy of HRP-901 - Human Body Fluids for Research Form on the "Supporting Documents" page in CATS IRB. This form is available in the CATS IRB Library.

☐ Clinical Research Center (CRC) Advisory Committee – All campuses – Research involves the use of CRC services in any way.

☐ Conflict of Interest Review – All campuses – Research has one or more of study team members indicated as having a financial interest.

☐ Radiation Safety – Hershey only – Research involves research-related radiation procedures. All research involving radiation procedures (standard of care and/or research-related) must upload a copy of HRP-903 - Radiation Review Form on the "Supporting Documents" page in CATS IRB. This form is available in the CATS IRB Library.

☐ IND/IDE Audit – All campuses – Research in which the PSU researcher holds the IND or IDE or intends to hold the IND or IDE.

☐ Scientific Review – Hershey only – All investigator-written research studies requiring review by the convened IRB must provide documentation of scientific review with the IRB submission. The scientific review requirement may be fulfilled by one of the following: (1) external peer-review process; (2) department/institute scientific review committee; or (3) scientific review by the Clinical Research Center Advisory committee. NOTE: Review by the Penn State Hershey Cancer Institute Scientific Review Committee is required if the study involves cancer prevention studies or cancer patients, records and/or tissues. For more information about this requirement see the IRB website at: http://www.pennstatehershey.org/web/irb/home/resources/investigator

18.0 Multi-Site Research

If this is a multi-site study (i.e., the study will be conducted at other institutions each with its own principal investigator) and you are the lead investigator, describe the processes to ensure communication among sites in the sections below.

18.1 Communication Plans

Describe the plan for regular communication between the overall study director and the other sites to ensure that all sites have the most current version of the protocol, consent document, etc. Describe the process to ensure all modifications have been communicated to sites. Describe the process to ensure that all required approvals have been obtained at each site (including approval by the site's IRB of record). Describe the process for communication of problems with the research, interim results and closure of the study.

Not Applicable.

18.2 Data Submission and Security Plan

Describe the process and schedule for data submission and provide the data security plan for data collected from other sites. Describe the process to ensure all engaged participating sites will safeguard data as required by local information security policies.

Not Applicable.

18.3 Subject Enrollment

Describe the procedures for coordination of subject enrollment and randomization for the overall project.

Not Applicable.

18.4 Reporting of Adverse Events and New Information

Describe how adverse events and other information will be reported from the clinical sites to the overall study director. Provide the timeframe for this reporting.

Not Applicable.

18.5 Audit and Monitoring Plans

Describe the process to ensure all local site investigators conduct the study appropriately. Describe any on-site auditing and monitoring plans for the study.

Not Applicable.

19.0 Adverse Event Reporting

19.1 Reporting Adverse Reactions and Unanticipated Problems to the Responsible IRB

By submitting this study for review, you agree to the following statement – DO NOT ALTER OR DELETE:

In accordance with applicable policies of The Pennsylvania State University Institutional Review Board (IRB), the investigator will report, to the IRB, any observed or reported harm (adverse event) experienced by a participant or other individual, which in the opinion of the investigator is determined to be (1) unexpected; and (2) probably related to the research procedures. Harms (adverse events) will be submitted to the IRB in accordance with the IRB policies and procedures.

20.0 Study Monitoring, Auditing and Inspecting

20.1 Auditing and Inspecting

By submitting this study for review, you agree to the following statement – DO NOT ALTER OR DELETE:

The investigator will permit study-related monitoring, audits, and inspections by the Penn State quality assurance program office(s), IRB, the sponsor, and government regulatory bodies, of all study related documents (e.g., source documents, regulatory documents, data collection instruments, study data, etc.). The investigator will ensure the capability for inspections of applicable study-related facilities (e.g., pharmacy, diagnostic laboratory, etc.).

21.0 Future Undetermined Research: Data and Specimen Banking

If this study is collecting identifiable data and/or specimens that will be banked for future undetermined research, please describe this process in the sections below. This information should not conflict with information provided in section 9.1.1 regarding whether or not data and/or specimens will be associated with identifiers (directly or indirectly).

21.1 Data and/or specimens being stored

Identify what data and/or specimens will be stored and the data associated with each specimen.

Not applicable.

21.2 Location of storage

Identify the location where the data and/or specimens will be stored.

Not applicable.

21.3 Duration of storage

Identify how long the data and/or specimens will be stored.

Not applicable.

21.4 Access to data and/or specimens

Identify who will have access to the data and/or specimens.

Not applicable.

21.5 Procedures to release data or specimens

Describe the procedures to release the data and/or specimens, including: the process to request a release, approvals required for release, who can obtain data and/or specimens, and the data to be provided with the specimens.

Not applicable.

21.6 Process for returning results

Describe the process for returning results about the use of the data and/or specimens.

Not applicable.

22.4 Test Article(s) (Study Drug(s) and/or Study Device(s))

22.4.1 Description

Provide a brief description of all test articles (drugs (including any foods and dietary supplements), devices and/or biologics used in the research including the purpose of their use and their approval status with the Food and Drug Administration (FDA). Include information about the form of the drug product (e.g., tablets, capsules, liquid).

The VR kit is a technology that has been used in multiple research studies conducting exposure therapy to treat a range of psychiatric disorders. There have been no reports of participants being harmed in any way, shape, or form in the process. Further, VR technology has been around over the past two decades and has been used repeatedly in a wide range of settings. Therefore, it poses no safety concerns.

22.4.2 Treatment Regimen

Describe dose, route of administration and treatment duration. Include information about dose adjustments.

For each participant, the VR kit will be used for 30 minutes per session.

22.4.3 Method for Assigning Subject to Treatment Groups

Describe the randomization process and how the associated treatment assignment will be made.

Using a random number generator with the "RAND" function on Microsoft Excel, the participants will be randomly allocated to either one of the two treatment conditions (General Social Skills training or Job Interview training) or waitlist condition.

22.4.4 Subject Compliance Monitoring

Insert the procedures for monitoring subject compliance.

Study team members will track each participant's progress every session with the following indicators: (1) Level of completion of homework; (2) Response to the scripts of the virtual reality exposure therapy during each session; (3) Other indicators mentioned above in the protocol.

22.4.5 Blinding of the Test Article

Describe how the test article is blinded.

Not applicable. Study team members and participants will eventually know the assigned condition of each participant.

22.4.6 Receiving, Storage, Dispensing and Return

22.4.6.1 Receipt of Test Article

Describe how the test article will be obtained and from what source. Describe how the study test article will be packaged along with amounts (e.g., number of tablets/capsules or volume of liquid) and labeling. If drug kits are used, describe all the contents of the kit and associated labeling.

Not applicable – Researchers already have the VR equipment. We are waiting for IRB approval and the videos needed for the research study.

22.4.6.2 Storage

Describe the plans to store, handle the test article so they will be used only on subjects and only by authorized investigators. Describe storage temperature requirements and how temperature will be monitored and recorded.

All the VR kits and the scripts will be stored in a locked room belonging to the Newman Laboratory in the Moore building.

22.4.6.3 Preparation and Dispensing

Describe how the test article will be assigned to each subject and dispensed. Describe the steps necessary to prepare the test article. Include where the test article preparation will be done and by whom. Fully describe how the study treatment is to be administered and by whom.

The VRET is displayed on a mobile phone app mounted on a VR headset for a maximum of 30 minutes per session.

22.4.6.4 Return or Destruction of the Test Article

Describe the procedures for final reconciliation of the test article supply at the end of the study and whether the test article is to be shipped back to a source or destroyed on site.

Not applicable, the VR equipment was purchased and belongs to the University.

22.4.6.5 Prior and Concomitant Therapy

Describe what prior and/or concomitant medical therapy will be collected. Describe which concomitant medicines/therapies are permitted during the study. Describe which concomitant medicines are not permitted during the study.

Not applicable.

23.0 References

List relevant references in the literature which highlight methods, controversies, and study outcomes.

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