1-1-2023

Plot Twist: Vomiting is Good! Online Psychoeducational Intervention among Internet Support Group Users

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PLOT TWIST: VOMITING IS GOOD!

ONLINE PSYCHOEDUCATIONAL INTERVENTION AMONG INTERNET SUPPORT GROUP USERS

A Dissertation

presented in partial fulfillment of requirements

for the degree of Doctor of Philosophy

in Clinical Psychology

The University of Mississippi

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August 2023

ABSTRACT

Emetophobia is a specific phobia of vomit (SPOV) characterized by persistent and chronic symptoms with severe impairment across domains. Research on emetophobia is limited, with even fewer studies examining the impact of intervention. Available treatment studies have broadly been examined through behavioral interventions, such as cognitive behavioral therapy (CBT) of which psychoeducation is an important foundational component. The positive role of psychoeducation on symptom reduction has been examined among a variety of psychopathology, including anxiety disorders. However, to date, research has not examined the role of psychoeducation itself (psychoeducational intervention, PI) among specific phobias broadly or emetophobia specifically. Therefore, the present study piloted a single-session, individual telehealth CBT-based PI among individuals with emetophobia. Participants were recruited from social media groups or forums dedicated to individuals self-identifying as experiencing emetophobia. Individuals were randomly allocated to the active intervention condition (emetophobia focused PI) or control condition (mental health focused PI), and variables of interest (e.g., emetophobia, depression, and anxiety sensitivity) were assessed across pre-intervention and at post-intervention (one-month follow-up). It was hypothesized that symptoms of emetophobia would significantly decrease at the post-intervention among individuals in the active intervention. Secondly, it was hypothesized that participants in the active intervention would report decreased symptoms of emetophobia when controlling for depression and anxiety sensitivity. Finally, it was hypothesized participants at post-intervention and in the active intervention condition would report higher ratings of perceived acceptability of the PI. The final

clinical sample consisted of 90 participants (M_{age}= 28.41, SD= 8.73; 77.8% female; 85.6% White), who completed a series of randomized self-report measures, were randomly allocated to condition, and completed the same series of self-report measures at one-month follow-up. Results demonstrated a significant main effect of time, though not condition, on the outcome variable of emetophobia symptoms. When controlling for significant covariates of anxiety sensitivity and depression, neither time nor group had a notable effect on emetophobia symptoms. Finally, all participants, irrespective of time or condition, perceived the PIs to be equally highly acceptable. Despite the null findings related to PI, the present study contributed to the literature through future areas of research and additional considerations. Null findings may be attributed to sample characteristics (e.g., clinical severity) and format of PI (e.g., individual, single session). Future research may consider adapting towards a group-based format occurring over multiple sessions with less clinically severe emetophobia symptoms. Taken together, the present study provides preliminary data related to considering PI for emetophobia.

Keywords: emetophobia, specific phobia of vomiting, psychoeducation intervention (PI), anxiety sensitivity, depression

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

i. Emetophobia

Emetophobia, or the specific phobia of vomiting, is demonstrated by a fear of emesis that persists across multiple domains and causes significant distress and dysfunction. Compared to other psychological disorders, limited research exists regarding the epidemiology and treatment of emetophobia. For instance, Keyes and colleagues (2017) conducted a systematic review of published emetophobia research from the years of 1846 until 2016. Only 24 of the 385 studies identified during an initial database screening were ultimately examined after meeting the inclusion criteria (e.g., written in the English language, peer-reviewed; Keyes et al., 2017). Interestingly, prevalence of emetophobia varies across studies, ranging from 0.1% (Veale et al., 2015) to 8.8% (van Hout & Bouman, 2012). Research has identified the average age of onset as around late childhood to adolescence (7.5 to 12.7 years of age), with symptoms persisting for an average of 25.9 years before individuals seek treatment (Keyes & Veale, 2018; Lipsitz et al., 2001; Sykes et al., 2015). Similar to presentation of other specific phobias, emetophobia is diagnosed in more females than males (four times more likely; Keyes & Veale, 2018; Lipsitz et al., 2001; Van Hout & Bouman, 2012). Emetophobia is a unique and understudied disorder with severe symptoms persisting for many years.

Although the key element across symptoms of emetophobia is the fear of vomiting, its presentation is heterogenous. For instance, some individuals may identify the predominant fear as themselves vomiting (47.3%), whereas other individuals may place greater concern on

observing or being in the presence of others vomiting (reported in 12.7% of participants; Keyes et al., 2017). Additional areas of fear often reported include fear of vomiting in a public area (47.9%), fear of specific body sensations (such as nausea (100%) or gagging (83.8%)), loss of bodily control (19.1%), and/or fear of death by choking or suffocating on vomit (37.3%, Keyes et al., 2017). Notably, individuals with emetophobia demonstrate individual differences as they may report any one or more area of fear. Behaviorally, these fears are expressed in a variety of symptoms. Many individuals with emetophobia engage in significant behavioral avoidance, such as avoiding specific locations or people (e.g., hospitals, children) or certain behaviors associated with vomiting (e.g., drinking alcohol or eating specific foods; Höller et al., 2013; Keyes et al., 2017; Van Hout & Bouman, 2012). Other symptoms frequently reported include checking behaviors for signs of illness in self and others, reassurance seeking from others, significant safety behaviors, and excessive cleanliness (Veale et al., 2015).

Individuals with emetophobia also experience cognitive and physical symptoms. Cognitive symptoms of emetophobia may present as severe intrusive thoughts and imagery and a sense of lack of control related to vomiting (Boschen et al., 2013; Keyes & Veale, 2018). In addition to responding to situations with emotion-based reasoning (e.g., disgust), individuals with emetophobia often demonstrate heightened disgust sensitivity and propensity (Keyes & Veale, 2018; Verwoerd et al., 2016). This heightened reactivity to experience the emotion of disgust (disgust propensity) and the tendency for individuals to interpret the experience of disgust as negative (disgust sensitivity) are hypothesized to contribute to the development and maintenance of emetophobia symptoms (Keyes & Veale, 2018; Veale et al., 2013; Verwoerd et al., 2016). Similarly, individuals with emetophobia symptoms display increased anxiety sensitivity, or the interpretation that symptoms of anxiety are negative or harmful (Riddle-

Walker, et al., 2016). Additionally, symptoms of emetophobia often include an increased experience of and heightened sensitivity to physical symptoms, such as nausea and indigestion, which consequently maintain the fear of vomiting via hypervigilance and avoidance (Boschen, 2007; Höller et al., 2013; Kannappan & Middleman, 2020; Liebenberg & Santos, 2018). In one study, Höller and colleagues (2013) found that 80.9% of the 131 participants diagnosed with emetophobia reported experiencing significant and recurrent nausea symptoms, with 73.6% saying this occurs weekly. Taken together, the symptomology of emetophobia is significant and extends into multiple areas of life.

Given the severity of these symptoms, it is no surprise that individuals experiencing emetophobia symptoms demonstrate significant impairments in daily living and quality of life. For instance, individuals diagnosed with emetophobia identify decreased and impaired social functioning (e.g., avoidance of social gathering, excessive reassurance seeking), occupational or educational impairment (e.g., missed days or work/school), negative impact in health-related behaviors (e.g., avoidance of hospitals, pregnancy), and decreased subjective well-being (Liebenberg & Santos, 2018; Lipsitz et al., 2001; Veale & Lambrou, 2006). Further, emetophobia is highly comorbid with a variety of psychopathology (Keyes & Veale, 2018; Wu et al, 2015). A systematic review of the available literature conducted by Keyes and colleagues (2017) found comorbidity with other anxiety disorders, such as obsessive compulsive disorder (OCD, 9.6%), health anxiety or hypochondriasis (5.9%), social anxiety disorder (SAD, 10.1%), generalized anxiety disorder (GAD, 14.1%), agoraphobia (5.5%), and panic disorder (PD, 10.2%; Sykes et al., 2015; Veale et al., 2015). Additionally, comorbidity was seen with eating disorders (EDs, 1.1%) and major depressive disorder (MDD, 13.6%; Höller et al., 2013; Keyes et al., 2017; Sykes et al., 2015; Veale et al., 2012). Epidemiologically, it should be noted that

comorbidity has been most prevalent with MDD and GAD (Keyes et al., 2017; Wu et al., 2015). As such, extant literature indicates emetophobia symptoms are associated with significant life impairment and psychiatric comorbidities.

ii. Therapeutic Treatments

As with other psychopathology, there are a variety of theoretical orientations for clinicians to consider when treating emetophobia. Similar to treatment of specific phobias in general, treatment of emetophobia has been primarily conducted under the overarching theory of behaviorism, such as cognitive behavioral therapy (CBT; such as Boschen, 2007; Hunter & Antony, 2009; Keyes et al., 2020) or some combination of its components: cognitive therapy (CT; Kobori, 2011), exposures or behavioral therapy (BT; Maack et al., 2013). Additionally, emetophobia treatment has employed eye movement desensitization and reprocessing (EMDR; Jongh, 2012), clinical behavior analysis (CBA; Mitamura, 2019), and the following third-wave behaviorism treatment modalities: metacognitive therapy (MCT; Simons & Vloet, 2016) and acceptance and commitment therapy (ACT; Bogusch et al., 2018). Overall, behaviorism (specifically CBT) has been the primary therapeutic orientation used for successful treatment of emetophobia (Ahlen et al., 2015; Boschen, 2007; Dargis & Burk, 2019; Dosanjh et al., 2017; Fix et al., 2016; Graziano et al., 2010; Hunter & Antony, 2009; Kannappan & Middleman, 2020; Keyes et al., 2020; Kobori, 2011; Maack et al., 2013; Paulus & Norton, 2016; Riddle-Walker, et al., 2016; Veale, 2009).

Although most studies were conducted with a CBT conceptualization and treatment orientation, a few used third-wave behaviorism techniques and demonstrated consequent improvement in symptoms. For instance, Simons and Vloet (2016) conducted MCT with three adolescent individuals with emetophobia. Techniques, similar to those used in CBT, were used

by an experienced metacognitive therapist including mindfulness skills, metacognitive beliefs about worrying, and interoceptive attentional focus (Simons & Vloet, 2016). Not surprising, participants displayed a significant reduction in overall anxiety symptoms, depression, and metacognitive beliefs (Simons & Vloet, 2016). In a study employing ACT, two graduate student therapists treated an adolescent male diagnosed with emetophobia (Bogusch et al., 2018). Treatment emphasized acceptance, mindfulness, and valued action, such as engaging in behaviors perceived as "risky" (i.e., exposures) related to emetophobia symptoms (Bogusch et al., 2018). Results indicated significant reduction in emetophobia symptoms when comparing baseline to posttreatment and 12-month follow-up (Bogusch et al., 2018). Additionally, CBA was conducted in a case study involving an adult female diagnosed with emetophobia (Mitamura, 2019). Similar to techniques used in ACT, CBA incorporates mindfulness and valued actions with exposures and contextualism of feared stimuli (Mitamura, 2019). After a total of nine sessions, the individual displayed significant reduction in symptoms of emetophobia, depression, state and trait anxiety symptoms (Mitamura, 2019). Finally, Jongh (2012) conducted EMDR with an adult female, which incorporated eye movements in conjunction with recall of distressing and aversive vomit-related experiences (i.e., exposure). Although no data were collected on emetophobia symptoms specifically, the patient reported a significant decrease on the Symptom Checklist -90 and functional improvement (Jongh, 2012). Therefore, although less frequently employed than CBT, all behavioral treatment modalities in available literature appear to enact demonstrable symptom reduction or amelioration of emetophobia symptoms.

Primarily documented through case studies, behavior therapy, broadly defined, has been effective treatment for emetophobia, globally and across age and sex (Boschen, 2007; Dargis & Burk, 2019; Dosanjh et al., 2017; Fix et al., 2016; Graziano et al., 2010; Hunter & Antony, 2009;

Kobori, 2011; Klonoff et al., 1984; Maack et al., 2013; Paulus & Norton, 2016; Veale, 2009). All published case studies have evidenced a clinically significant improvement post-treatment and at follow-up (Dargis & Burk, 2019; Dosanjh et al., 2017; Fix et al., 2016; Graziano et al., 2010; Hunter & Antony, 2009; Kobori, 2011; Klonoff et al., 1984; Maack et al., 2013; Paulus & Norton, 2016). In a recent single case experimental design study, participants diagnosed with emetophobia (*N*=8) received time intensive CBT over the course of 6 weeks (Keyes et al., 2020). Results found more than half of participants had significant symptom improvement after treatment and follow-up (Keyes et al., 2020). Finally, to date, only one randomized control trial (RCT) has been published regarding the treatment of emetophobia. Riddle-Walker and colleagues (2016) conducted the CBT treatment protocol for emetophobia developed by Veale (2009) among patients with emetophobia. This protocol consists of goal setting and psychoeducation, imaginal and in vivo exposures, and cognitive restructuring conducted over the course of 12 sessions. Participants (*N*= 17) were randomized into the active treatment condition (CBT) or control condition (waitlist). Results demonstrated that 50% of the treatment group participants displayed clinically significant change among a series of self-report measures (including anxiety sensitivity and emetophobia symptoms), as compared to 16% in the control group (Riddle-Walker et al., 2016). As such, across study design and demographics, research indicates CBT is effective in the treatment of emetophobia.

The primary modality for treatment of emetophobia has been delivered in individual, face-to-face settings (Bogusch et al., 2018; Dargis & Burk, 2019; Dosanjh et al., 2017; Fix et al., 2016; Graziano et al., 2010; Hunter & Antony, 2009; Jongh, 2012; Keyes et al., 2020; Kobori, 2011; Maack et al., 2013; Paulus & Norton, 2016; Riddle-Walker, et al., 2016; Simons & Vloet, 2016). Only one study thus far has examined emetophobia treatment in a different modality:

group therapy. Ahlen and colleagues (2015) conducted group CBT over 10, two and a half hour sessions among patients diagnosed with emetophobia (*N*=23). Results demonstrated a significant reduction in emetophobia symptoms (Ahlen et al., 2015). Additionally, reduction of both anxiety symptoms and depressive symptoms were maintained from treatment completion to three-month follow-up (Ahlen et al., 2015). Notably, there are no studies thus far that have detailed use of telehealth in the treatment of emetophobia, despite its widely accepted use and efficacy across psychological disorders and demographics (e.g., specific phobias: Vigerland et al., 2013; CBT: Dent et al., 2018; group treatment: Gentry et al., 2019; PTSD: Olden et al, 2017; and MDD: Osenbach et al., 2013). Although emetophobia has been primarily treated in an individual, face-to-face setting, evidence suggests treatment in telehealth and other modalities (e.g., group settings) may also be effective.

Similar to CBT treatment for other anxiety disorders, CBT for emetophobia focuses on the cognitive and behavioral components that contribute and maintain anxiety symptoms. For instance, CBT treatment for emetophobia typically begins with an orientation to the foundation of CBT and psychoeducation of nausea/vomit and the construct of anxiety (Ahlen et al., 2015; Boschen, 2007; Hunter & Antony, 2009; Veale, 2009). Subsequent sessions consist of examining automatic thoughts and cognitive distortions, behavioral strategies (avoidance, safety behaviors), and conducting exposures (interoceptive, imaginal and/or in vivo; Ahlen et al., 2015; Boschen, 2007; Hunter & Antony, 2009; Riddle-Walker et al., 2016). Although sessions are ideographic to the patient, the average duration of treatment is 10 to 12 sessions in the literature (Ahlen et al., 2015; Hunter & Antony, 2009; Riddle-Walker et al., 2016). By and large, CBT has been found to prove effective in the treatment of emetophobia. Interestingly, among emetophobia, the

effectiveness of the components of CBT, namely psychoeducation, have not yet been investigated.

iii. Psychoeducation Intervention (PI)

Occurring at the beginning of therapy, psychoeducation is a basic component of CBT treatment, forming the underlying structure through which patients acquire skills and knowledge throughout treatment. Psychoeducation, broadly defined, is an evidence-based practice involving the dissemination of information regarding psychological diagnoses and disorders to patients and their families (Bevan-Jones et al., 2018; Donker et al., 2009; Economou, 2015; Lukens & McFarlane, 2006). Fruzzetti and colleagues (2014) identified four major components of effective psychoeducation for individuals and family members: development of coping skills (e.g., relaxation techniques), social support (e.g., fellow group members), problem-solving and active application of skills, and education about the disorder. The educational portion is broad and may consist of the disorder's etiology and prognosis, symptoms and exacerbating factors, treatment options, available community resources, and pertinent research (Fruzzetti et al., 2014). Colom (2011) described psychoeducation as a "simple" therapeutic intervention, as opposed to a "skilled" therapy (e.g., CBT). A "simple" intervention is specific to the disorder/illness, is easily integrated into settings and existing treatments, is not complex and does not expound via theory (Colom, 2011).

Psychoeducational interventions (PIs) are frequently used as a component within a larger treatment protocol or as a first-line, stand-alone treatment for a variety of illnesses and disorders (e.g., physical and mental health; Donker et al., 2009; Patel et al., 2020; Wiseman et al., 2016). PIs are administered passively (i.e., without provider guidance, e.g., web page) or actively (i.e., with provider guidance, e.g., group intervention; Donker et al., 2009). Both active and passive

PIs are effectively delivered within a variety of modalities (telehealth, individual and group formats; Frias et al., 2020; Latalova et al., 2013; Melo-Carrillo et al., 2012; Norr et al., 2017; Ran et al., 2015; Rotondi et al., 2010; Taylor-Rodgers & Batterham, 2014; Zippan et al., 2020). Recipients of PIs may include patients, familial and social supports, caregivers, and healthcare providers (Bevan-Jones et al., 2018; Dahl et al., 2020; Economou, 2015; Frias et al., 2020; Hazell et al., 2020; Mills et al., 2019; Van Daele et al., 2012). Importantly, PIs are frequently used as a stand-alone treatment due to their cost-effective nature and enhanced accessibility to populations of interest (Houghton & Saxon, 2007; Shimodera et al., 2012; van Helmondt et al., 2016). PIs have demonstrated effectiveness in improving overall patient knowledge, increasing the rate of further treatment seeking, and facilitating symptom reduction across different demographic presentations and psychopathology (Bevan et al., 2018; Dahl et al., 2020; Dijk et al., 2012; Donker et al., 2009; Fursland et al., 2018; Hasan & Belkum, 2019; Hilker, et al., 2016; Kariuki et al., 2020; Mills et al., 2019; Ran et al., 2015). Therefore, the literature suggests PIs are effective in reducing symptoms and increasing knowledge across modalities.

Compared to larger treatment-based dismantling studies, the examination of the unique impact of PIs for psychopathology symptoms is less documented (Bevan-Jones et al., 2018; Tursi et al., 2013). In a recent systematic review of PIs in adolescents diagnosed with depression, Bevan-Jones and colleagues (2018) cited the limited number of PI studies as potentially due to the heterogenous definition of psychoeducation. For example, of the 15 studies analyzed, there were variable lengths of treatment (e.g., frequency of sessions), lack of methodological clarity (e.g., inconsistent use of outcome measures), and confounding variables (e.g., PIs conducted alone or in conjunction with CBT). Consequently, the lack of a consistent and specific definition

of PIs was found to hinder the validity and applicability of treatment comparisons across studies (Bevan-Jones et al., 2018).

Despite these limitations, Bevan-Jones and colleagues (2018) found support for PIs among adolescents with symptoms of depression across modality (telehealth vs. in-person; individual, group, and family formats). Similarly, PIs across modalities were found to be effective for adults with symptoms of MDD and their families in a systematic review consisting of multiple PI-based RCTs (Tursi et al., 2013). Further, Rigabert and colleagues (2020) examined 21 RCTs for PIs among adults with symptoms and diagnosis of depression. PIs were associated with significant and highly robust symptom improvements in adults diagnosed with depression compared with active control conditions. Of note, a meta-regression of the RCTs indicated that one of the most significant variables for effectively reducing symptoms was delivery via an interactive website (i.e., virtual audio/visual interaction on the computer, *N*= 18), as compared to delivery via emails (*N*= 1) or telephone messages (*N*=1), regardless of guidance (i.e., led by self or instructor; Rigabert et al., 2020). Finally, a recent systematic review examined PI studies in the prevention of MDD (i.e., identified as any intervention targeting the entire population, high-risk or individuals with prodromal symptoms; Conejo- Cerón et al., 2020). Among the 27 studies analyzed, age was evidenced as a unique moderator among adults, such that younger age was associated with larger intervention effects (Conejo- Cerón et al., 2020). In addition to MDD (Bevan-Jones et al., 2018; Rigabert et al., 2020; Tursi et al., 2013), experimental PI treatment studies were found effective in reducing symptom severity among patients with eating disorders (Fursland et al., 2018; Hilker et al., 2016), bipolar disorder (Fiorillo et al., 2015), schizophrenia (Alizioti & Lyrakos, 2019; Aguglia et al., 2007; Hasan & Belken, 2019; Rotondi et al., 2010), attention deficit/hyperactivity disorder (Dahl et al., 2020;

Hoxhaj et al., 2018), autism spectrum disorder (Gordon et al., 2015), psychosis (Calvo et al., 2015), social anxiety (Dijk et al., 2012; Vassilopoulos et al., 2013), and borderline personality disorder (Ridolfi et al., 2019). Taken together, PIs have been largely found to be effective as an initial treatment intervention in a variety of psychopathology, regardless of modality.

Regarding specific phobias, few studies have examined the use of PIs without concurrent administration of exposures and/or within a larger CBT protocol. For instance, one study compared a psychoeducation control group to the active CBT condition among children with school phobias over a 12-week period (Last et al., 1998). Both groups displayed significant reduction in symptoms of anxiety and depression in addition to functional gains (i.e., returning to school; Last et al., 1998). Notably, no significant differences were displayed at end of intervention or at the year follow-up (Last et al., 1998). Similarly, Silverman and colleagues (1999) conducted a 10-week intervention for phobic children (specific, social, agoraphobia; *N*=104) and their parents among three conditions (contingency management, exposures, or educational support; Silverman et al., 1999). Results indicated all conditions displayed improved phobic symptoms maintained at three follow-up time points (3- 6-, 12- months; Silverman et al., 1999). Ollendick and colleagues (2009) examined a single session treatment for youth (*N*= 196) with specific phobias (animal, nature/environment, blood-injection or injury, situational, or other). Across three interventions (exposure, educational support, and waitlist control), participants in either active condition evidenced significant symptom improvement when compared to the waitlist control (Ollendick et al., 2009). Participants in the exposure group evidenced superior treatment gains when compared to their educational support counterparts (Ollendick et al., 2009). Finally, Flatt and King (2010) also examined the efficacy of a single session intervention among children and adolescents with specific phobias (animal,

nature/environment, blood-injection or injury, situational, or other). Forty-three participants were randomly allocated to one of three conditions: exposure, psychoeducation, or waitlist control (Flatt & King, 2010). Both active conditions (PI and exposure) evidenced significant symptom improvement when compared to the waitlist control regarding reported self-efficacy and engagement in behavioral avoidance tests (Flatt & King, 2010). Further, no significant differences among the active conditions were evidence at the one-year follow-up (Flatt & King, 2010). Although research is limited and has been conducted solely on children and adolescents, available literature suggests PIs (single session and longer) are an effective treatment for specific phobias.

Few dismantling studies have examined the unique impact of PIs verses larger treatment protocols. One study examined symptom improvement among adults diagnosed with health anxiety disorder and somatic symptom disorder who were treated via telehealth with either the active (CBT) or control condition (PI; Newby et al., 2018). Although the active treatment group demonstrated greater improvement in health anxiety symptoms, the PI group also evidenced significant improvement among health anxiety, depression, and general anxiety symptoms (Newby et al., 2018). Similarly, a RCT was conducted to compare effectiveness of family-focused CBT versus psychoeducation among adolescents diagnosed with chronic fatigue syndrome (Lloyd et al., 2012). Both treatment groups evidenced significant improvement in primary (school attendance) and secondary outcomes (functional impairment, emotional and behavioral adjustment, fatigue symptoms; Lloyd et al., 2012). Although most primary and secondary outcome gains were maintained at two-year follow-up in both conditions, secondary gains in the area of behavioral adjustment declined in the PI group (Lloyd et al., 2012). Wong and colleagues (2016) examined treatment effectiveness for GAD across modalities comparing

PI and mindfulness-based cognitive therapy, with a control group. Interestingly, results demonstrated no significant difference in improvement of GAD and depression symptoms between both treatment groups, with both being superior to the control group (Wong et al., 2016). Finally, Norr and colleagues (2017) examined the efficacy of a PI compared to a control condition in a pre-selected undergraduate sample assessed as experiencing heightened cognitive symptoms of anxiety sensitivity. Conducted as a brief (35 minute) single, individual session, the PI group evidenced significant reduction in anxiety sensitivity symptoms when compared to the active control condition (Norr et al., 2017). Following the initial session, participants in both groups received dissociative symptom inductions (i.e., flashing lights and noise in both ears) to provoke anxiety sensitivity symptoms. Results found that participants in the PI group displayed significantly lower self-reported fear reactivity and anxiety sensitivity symptoms than the active control group, indicating brief single PI is an effective intervention (Norr et al., 2017). Taken together the literature suggests that, though symptom improvement may be less robust than full CBT treatment, PIs have been demonstrated to be an effective treatment option across psychopathology.

iv. The Present Study

Despite the well-documented effectiveness of both CBT and PIs in anxiety disorders and other psychopathology, the unique impact of psychoeducation only interventions has not yet been examined among individuals with emetophobia. Similarly, notwithstanding the established effectiveness of telehealth, there are no published studies in which emetophobia was treated in a virtual telehealth format. Further, telehealth PIs uniquely provide the benefit of cost-effectiveness and capacity to access greater amount in the population of interest (Houghton & Saxon, 2007; Shimodera et al., 2012; van Helmondt et al., 2016). As such, the aim of this study

was to examine the utility of a novel single session, CBT-based PI (active intervention) using a telehealth format to examine the reduction of emetophobic symptoms in individuals self-identified as experiencing emetophobia. Based on prior research, the active intervention was compared to the control intervention wherein participants received a PI for broad-based mental health resources (also referred to as 'active control' condition; Conejo- Cerón et al., 2020; Newby et al., 2018; Wong et al., 2016). Given the comorbidity of emetophobia with MDD and heightened anxiety sensitivity (Höller et al., 2013; Keyes et al., 2017; Riddle-Walker et al., 2016; Sykes et al., 2015; Veale et al., 2012), these constructs were examined as covariates in the effectiveness of the PI. Potential implications of the current study were assessed related to the efficacy and feasibility of an online psychoeducation intervention for emetophobia, such as cost-effectiveness and the capacity to reach a wider audience. Therefore, the following hypotheses were tested:

(H1) Participants who receive the active intervention will endorse lower symptoms of emetophobia than the control group at post-intervention (i.e., one-month follow up).

(H2a) Controlling for depression and anxiety sensitivity symptoms, participants who receive the active intervention will report reduced cognitive symptoms of emetophobia as compared to the control group at post-intervention (i.e., one-month follow up).

(H2b) Controlling for depression and anxiety sensitivity symptoms, participants who receive the active intervention will report reduced behavioral symptoms of emetophobia as compared to the control group at post-intervention (i.e., one-month follow up).

(H3) Participants who receive the active intervention will report higher ratings of perceived acceptability than the control group at post-intervention (i.e., one-month follow up).

II. METHODS

i. Participants

To ensure accessibility to the internet and basic computer literacy, as well as to increase the likelihood of individuals endorsing marked symptoms of emetophobia, participants were recruited from online emetophobia forums and social media platforms (i.e., Reddit, Facebook, Instagram, TikTok and Emetophobiaforum.com) using a standard study announcement. Exclusion criteria were individuals currently engaged in psychotherapy, those who do not speak fluent English, individuals residing outside of the United States, and individuals younger than age 18. Due to the low prevalence of emetophobia, the current study included participants of both sexes. To achieve adequate power for the main analysis of a mixed model ANCOVA, a G*Power analysis was performed prior to study commencement. For a medium effect size (d= 0.50) and a power of 0.80, the analysis indicated a sample size of *N*=42 would be sufficient (Faul et al., 2009). Given the likelihood of attrition from intervention to one-month follow up, the aim prior to study commencement was to recruit a sample of *N*=80 or greater. Data were collected from May 13th, 2022 through March 5th, 2023.

ii. Measures

The Emetophobia Questionnaire - 13 (see Appendix F). The Emetophobia Questionnaire - 13 (EmetQ-13; Boschen et al., 2013) is used to assess behaviors occurring within the past week related to fear of vomiting symptoms (e.g., “I avoid air travel because I may become nauseous/vomit” and “I avoid children who may be likely to vomit”). Measured on a 13-

item Likert-type scale, higher scores indicate increased symptom severity with a suggested clinical cutoff score of 22 or higher (Boschen et al., 2013). The EmetQ-13 has demonstrated adequate internal consistency in clinical and non-clinical samples (α = .82, α = .85, respectively; Boschen et al., 2013). The EmetQ-13 scores were used to measure behavioral symptoms of emetophobia. EmetQ-13 scores in the present study indicated good internal consistency for both time points (pre: α =.84 and post: α =.83, respectively).

The Specific Phobia of Vomiting Inventory (see Appendix G)**.** The Specific Phobia of Vomiting Inventory (SPOVI; Veale et al., 2013) is a 14-item measure used to examine cognitive symptoms of emetophobia experienced during the past week (e.g., "I have been worrying about myself or others vomiting" and "I have been thinking about how to stop myself or others from vomiting"). Higher scores from this 14-item Likert-type scale indicate increased symptom severity with a recommended clinical cutoff score of 10 or higher (Veale, et al., 2013). The SPOVI has demonstrated good internal consistency (α = .89) and both convergent and divergent validity (Maack et al., 2017). The SPOVI score were used to measure cognitive symptoms of emetophobia. SPOVI scores in the current study indicated excellent internal consistency for both time points (pre: α =.94 and post: α =.95, respectively).

Depression, Anxiety, and Stress Scale – 21 (see Appendix H). The Depression, Anxiety, and Stress Scale – 21 (DASS-21; Lovibond & Lovibond, 1995) is a 21-item questionnaire that measures symptoms of depression, anxiety, and stress experienced within the last week. Three subscales assess for overall symptoms of depression, anxiety, and stress. The DASS-21 has evidenced good internal consistency across subscales (α = .90, depression; α = .82, anxiety; α = .87, stress; Lee, 2019). The current study utilized the depression subscale to assess general depression symptoms. In the current study, scores on the DASS-21 indicated excellent

internal consistency for the total scale (pre: α =.93 and post: α =.95), as well as the depression subscale (pre: α =.91 and post: α =.92) for both time points.

Anxiety Sensitivity Index – 3 (see Appendix I). The Anxiety Sensitivity Index – 3 (ASI-3; Taylor et al., 2007) is an 18-item self-report measure assessing symptoms of anxiety sensitivity experienced over the last week. Rated on a Likert-type scale, the measure provides an overall score as well as three subscales (physical, cognitive, and social symptoms). Suggested clinical cutoffs for the total ASI-3 score have been proposed as a bifactor model (normative: less than or equal to 19; moderate/high: 23 or greater) or a three-factor model (high (29 or greater), moderate (20-28) and low (19 or less; Volarov et al., 2020). The current study used the total score of the ASI-3 to assess for anxiety sensitivity symptoms, as the subscale scores were not found to provide additional clinical utility beyond the total score (Ebesutani et al., 2014). The ASI-3 has displayed good to excellent internal consistency across the total score (α = .93) and subscale scores (physical: α = .88; cognitive: α = .90; social: α = .80; Wheaton et al., 2012). In the current study, ASI-3 scores indicated excellent internal consistency for both time points (pre: α =.91 and post: α =.92, respectively).

Acceptability of Intervention Measure (see Appendix J). The Acceptability of Intervention Measure (AIM; Weiner et al., 2017), a four item Likert-type scale, will be used to measure perceived acceptability of the intervention. Higher overall scores reflect greater intervention acceptability (Weiner et al., 2017). The AIM has evidenced good internal consistency (α = .89; Weiner et al., 2017). The current study examined total scores to determine the perceived acceptability of both active intervention and control group. The AIM scores in the present study indicated good to excellent internal consistency across time points (pre: α =.86 and post: α =.91, respectively).

iii. Procedure

All procedures were reviewed and approved by the institution's IRB prior to participant recruitment and data collection. Participants were recruited via social media platforms and forums dedicated to individuals with emetophobia (i.e., Reddit, Facebook, Instagram, TikTok and Emetophobiaforum.com). A standardized study announcement was posted on the platforms which directed interested participants to the research website (Qualtrics) for further information. If interested in completing the study, participants were then required to confirm their age of 18 or older and virtually sign the informed consent. Demographics were completed at the beginning of the study and the self-report measures (i.e., EmetQ-13, SPOVI, DASS-21, and ASI-3) were randomized in administration for baseline/pre-intervention measures (i.e., time point one). Participants were then randomly assigned to either the active intervention or control group via Qualtrics and directed to a web page where they watched an audiovisual presentation designed as a PI for emetophobia (active intervention condition) or PI for general mental health information (control condition). The audiovisual presentations for each condition were recordings created by the primary investigator that were designed to be viewed by the participant in one sitting and were of similar length (control condition: 22 minutes, 32 seconds; active intervention condition: 22 minutes, 31 seconds). Immediately after completion of the videos, participants completed a self-report measure regarding the perceived acceptability of the intervention (AIM). Amid the administration of the self-report measures, participants were presented with two manipulation checks (i.e., a question to ensure participants are paying attention) to ensure active engagement and appropriate responding. Finally, participants were reminded that they would be asked to complete a follow-up questionnaire in approximately one month, wherein they would have the opportunity to opt-in to a drawing to receive one of five $10 Amazon gift cards as an incentive

(to be randomly selected following completion of data collection). Approximately 30 days following session completion, participants were contacted via email to complete the follow-up portion of the study (time point two). Participants were emailed a direct study link (Qualtrics) wherein all self-report measures were re-administered in a randomized order with one manipulation check. After completion of measures, participants were directed to a separate web page wherein they could provide their first and last name and email to enroll in the drawing for the incentive, if desired. Participants were informed that incentives would be randomly chosen and virtually allocated three to four weeks after the study closure. Incentives were anonymously sent to randomly chosen participants via Amazon e-gift cards on March 29th, 2023.

Control condition: Individuals randomly assigned to the control condition were directed to a web page consisting of a brief pre-recorded audiovisual presentation to be completed in one sitting (video length: 22:32). Information provided in the presentation discussed broad mental health resources that were not specific to emetophobia across five segments. The presentation began with an introduction regarding who was presenting the video and an outline of the presentation. The first segment, titled "What to Expect in Psychotherapy," of the presentation reviewed what to expect during therapy, such as expectations of psychotherapy (e.g., timeline of scheduling), logistics of treatment (e.g., duration, length, frequency), and therapeutic orientations (e.g., the 4 most common orientations, APA). For the second segment, "Locating Providers" in participants' respective locations were discussed, such as step-by-step directions with a demonstration on PsychologyToday.com and Locator.Apa.Org. The segment also discussed the different areas consumers may consider (e.g., specialization and training) and understanding client-therapist fit. The third segment, "Suicidality," discussed suicidality, such as the statistics and prevalence rates across the United States, as well as description of symptoms and warnings

signs. Participants were provided national suicide hotline contact information and given directions for dealing with a crisis situation (e.g., go to the nearest emergency room or call 9-1-1) and locating local crisis line numbers. The fourth segment, or "Stress," reviewed general aspects of stress (e.g., symptoms, short- and long-term consequences, Yerkes-Dodson law) with applied scenarios. The final segment, or "Coping Skills," introduced adaptive coping skills and provided a variety of suggestions (e.g., knitting, painting, socialization). The specific skill of progressive muscle relaxation (PMR) was modelled using a YouTube video. The presentation concluded with providing participants additional resources and citation of references, and participants were reminded of the one-month follow-up portion of the study.

Active intervention Condition: Similar to the control condition, individuals receiving the active intervention condition were directed to a web page consisting of a brief pre-recorded audiovisual presentation designed to be completed in one sitting (video length: 22:31). The information provided in the active intervention condition was created in accordance with the recommendations provided by Colom (2011), Economou (2015), Fruzzetti and colleagues (2014), and Lukens and McFarlane (2006). The presentation consisted of five segments related to emetophobia and began with an introduction regarding who was presenting the video and an outline of the presentation. The first segment, titled "Introduction to Emetophobia", introduced emetophobia by providing a diagnostic description, frequent comorbidities, and common symptoms (e.g., cognitive, physical, and behavioral) with an applied scenario. The second segment, or "Overview of Emetophobia", discussed the etiology of emetophobia (e.g., learning history and biological predispositions, prognosis, and different treatment orientations (e.g., CBT, CBA, ACT). As research has predominantly focused on CBT treatments, this orientation was expanded on to discuss the cognitive and behavioral approaches one may encounter in treatment

(e.g., cognitive restructuring and behavioral exposures) with applied scenarios. The third segment, "Physiological Basis of Vomit," focused on the physiological utility of vomit (e.g., survival) and provided information on the transmission of norovirus/rotavirus as compared with non-contagious vomiting. The fourth segment, or "Maintenance and Safety Behaviors," reviewed behaviors that exacerbate and maintain symptoms of emetophobia (e.g., avoidance and safety behaviors) with applied scenarios. The final segment, "Coping Skills," introduced adaptive coping skills and provided a variety of suggestions (e.g., knitting, painting, socialization). The specific skill of progressive muscle relaxation (PMR) was modelled using a YouTube video. The presentation concluded with providing participants additional resources and citation of references, and participants were reminded of the one-month follow-up portion of the study.

III. RESULTS

i. Data Cleaning

All statistical analyses were conducted in SPSS, Version 29. Data collection yielded an original sample of 865 unique participants (i.e., individuals who viewed the Qualtrics study page) at the first time point and 130 participants at the one-month follow up. Following data cleaning at the first time point, 274 participants were removed due to incomplete data (i.e., missing more than 10% of the variables) and 288 participants were removed due to not meeting all inclusion criteria requirements. Finally, 34 participants were removed due to not completing all of the manipulation checks (i.e., 16 in active intervention and 18 in control condition). As such, the first time point yielded a final sample of 269 participants. At the one-month follow up (time point two), 130 responses were collected. Of these responses, 40 participants were removed due to incomplete data (i.e., missing more than 10% of the variables). As such, the final sample for time point two consisted of 90 participants. Of these 90 participants, none were identified as outliers using Mahalanobis distance and data did not evidence skewness or kurtosis. Therefore, a final sample of 90 participants (N=43 in control condition, N=47 in active intervention) completed data for both time points and were used in statistical analyses (figure 1).

ii. Preliminary Analyses

Following data cleaning, the final sample consisted of 90 participants, aged 18 to 76 years (M_{age}= 28.41, SD= 8.73). Participants self-identified their gender as 77.8% female, 16.7% male, 3.3% non-binary, and 2.2% preferred not to answer. The ethnic breakdown of the sample

was as follows: 85.6% White, 1.1% African American, 3.3% Asian or Pacific Islander, 3.3% American Indian or Alaskan Native, and 6.7% Multiracial; and 14.4% identified as Hispanic. Participants were located in the following regions of the United States: 25.6% West, 23.3% Southeast, 20.0% Midwest, 20.0% Northeast, and 11.1% Southwest. Of the 90 participants in the final sample, all opted in for the randomized incentive drawing.

Of the total sample, the majority of participants displayed significant symptoms of emetophobia. Specifically, on the SPOVI, the majority of participants (i.e., over 95%) were at or above the suggested clinical cutoff at time points one and two (*N*=87 and *N*=86, respectively). Similarly, on the EmetQ-13, the majority of participants (i.e., over 93%) were at or above the suggested clinical cutoff at both time points one and two (*N*=85 and *N*=84, respectively). On the ASI-3, most participants (i.e., over 80%) were also above the clinical cutoff (i.e., moderate to high levels of anxiety sensitivity) using the bifactor model at both time points one and two (*N*=77 and *N*=75, respectively). Regarding symptoms of depression on the DASS-21, 63% (time point one) and 62% (time point two) of participants reported elevated symptoms (i.e., mild and above). The severity levels of depressive symptoms for participants at time point one were as follows: *N*=33 within normal limits, *N*=13 mild, *N*=18 moderate, *N*=9 severe, *N*=17 extremely severe. The severity levels of depressive symptoms for participants at time point two were as followed: *N*=34 within normal limits, *N*=12 mild, *N*=18 moderate, *N*=11 severe, *N*=15 extremely severe.

Means and standard deviations are provided in Table 1 for all variables of interest, excluding the AIM (see table 4). Correlational analyses were conducted among symptoms of emetophobia, depression, and anxiety sensitivity. All variables were significantly associated at

both time points. At each time point, both measures of emetophobia symptoms were significantly related to each other, as well as with symptoms of depression and anxiety sensitivity.

iii. Primary Analyses

Hypothesis 1. To test the hypothesis that participants in the active intervention condition will endorse lower symptoms of emetophobia than the control group at one-month follow up, a mixed model ANOVA (table 2) was conducted to investigate the impact of independent variables of condition (active intervention and control) and time (pre-intervention and post-intervention) on emetophobia symptoms. Using the SPOVI, results yielded a significant main effect of time, $F(1, 88)= 21.93$, $p= <.001$, such that emetophobia symptoms decreased over time. However, there was no significant main effect of condition, $F(1, 88)= .71$, $p=.40$, or significant interaction between time and condition, $F(1, 88)=1.17$, $p= .28$, on emetophobia symptoms. Using the EmetQ-13, results yielded a significant main effect of time, $F(1, 88)= 5.80$, $p= .02$, such that that emetophobia symptoms decreased over time. Similarly, there was no significant main effect of condition, $F(1, 88)= 3.01$, $p=.09$, or significant interaction between time and condition, $F(1, 88)=.14$, $p= .71$, on emetophobia symptoms.

Hypothesis 2a and 2b. *(H2a)* Controlling for depression and anxiety sensitivity symptoms, participants who receive the active intervention will report reduced cognitive symptoms of emetophobia (SPOVI) as compared to the control group at one-month follow up. *(H2b)* Controlling for depression and anxiety sensitivity symptoms, participants who receive the active intervention will report reduced behavioral symptoms of emetophobia (EMET-Q) as compared to the control group at one-month follow up. These hypotheses were examined using a mixed model ANCOVA, with the independent variable of emetophobia symptoms (cognitive and

behavioral, respectively), dependent variable of (pre-intervention and post-intervention), and covariate variables of depression and anxiety sensitivity.

Related to H2a (table 3), results from the ANCOVA suggested there was no significant main effect of time, F(1, 86)= .18, *p*=.67, on cognitive emetophobia symptoms, while controlling for symptoms of depression, F(1, 86)= 1.56, *p*=.22. The main effect of time while controlling for anxiety sensitivity was approaching significance, F(1,86)= 3.92, *p*=.051. There was no significant main effect of condition, F(1, 86)= .17, *p*=.68. There were no significant interaction effects between condition and time, F(1,86)= .98, *p*=.33. Both anxiety sensitivity, F(1, 86)= 5.63, *p*=.02, and depression, F(1, 86)= 8.27, *p*=.005, were significant covariates between subjects.

Analysis testing H2b (table 3) demonstrated no significant main effect of time, F(1, 86)= .80, *p*=.37, on behavioral emetophobia symptoms, while controlling for symptoms of depression, F(1, 86)= 1.12, *p*=.29, or anxiety sensitivity, F(1, 86)= .28, *p*=.60. There was no significant main effect of condition, F(1, 86)= 2.18, *p*=.14. Also, there were no significant interaction effects between condition and time, F(1, 86)= .04, *p*=.84. The covariate of anxiety sensitivity, F(1, 86)= 9.77, *p*=.002, was significant; however, the covariate of depression was not, F(1, 86)= 2.70, *p*=.10.

Hypothesis 3. To test the hypothesis that participants in the active intervention will report higher ratings of perceived acceptability than the control group at one-month follow up, a mixed model ANOVA (table 4) was conducted. More specifically, the ANOVA was used to investigate the impact of independent variables of condition (active intervention and control) and time (pre-intervention and post-intervention) on ratings of perceived acceptability of the intervention. Results yielded no significant main effect of time, F(1, 88)= .59, *p*= .44, and no significant main effect of condition, (F(1, 88)= 1.13, *p*=.29. Additionally, there was no

significant interaction between time and condition on perceived acceptability ratings, $F(1, 88) = .93$, $p = .34$.

iv. Post-hoc Analysis

Qualitative analysis was conducted to gain further insight into participants' perception of the PIs. In the active condition, 91.5% of participants ($N = 43$) elected to provide free responses regarding which element(s) of the PI they perceived as most helpful, whereas 81.4% ($N = 35$) of participants in the control condition ($N = 35$) provided responses. To aid in evaluation, free responses were quantitatively coded by segment(s) of choice: (0) none; (1) segment one; (2) segment two; (3) segment three; (4) segment four; (5) segment five; (6) multiple segments. Free responses were also analyzed at the qualitative level.

Among both conditions, 32.3% participants identified video segment five, or coping skills and PMR, as the most beneficial ($N = 29$) and 14.4% identified multiple segments were equally beneficial ($N = 13$, with $N = 6$ in active condition and $N = 7$ in control condition). Of the individuals who identified multiple segments as helpful, 100% of participants identified segments four and five as the most beneficial across condition ($N = 13$) and 30.8% identified all five segments as helpful ($N = 4$). Both segments three (physiological basis for vomit and stress) and four (maintenance behaviors of emetophobia and suicidality) were rated equally helpful across condition by 12.2% of participants ($N = 11$). Segment two (overview of emetophobia and locating providers) was identified as the most helpful by 6.7% of participants ($N = 6$), while segment one (introduction to emetophobia and expectations in psychotherapy) was identified as the most helpful by 2.2% of participants ($N = 2$). Finally, 5.6% participants ($N = 5$) identified that none of the segments were helpful across condition.

Qualitatively, many participant's free responses identified specific segments of the video and did not elaborate on their decision. However, a few participants elected to elaborate on their

preferences. The content of the free response elaboration was consistent with their AIM rating, such that participants with lower AIM ratings provided negatively valanced responses. For example, one participant wrote, "*Honestly? None. For someone who has had emetophobia for the last two decades, none of it was new information. I don't want to be rude, but felt the presentation was boring. I didn't learn anything new. On a side note, PMR is fine but other things to calm the vagus nerve response is usually more helpful to calm those*." Another participant with low AIM ratings wrote, "*General information about the biology of the condition, it was very basic and I've read a lot (and am a psychologist) so it wasn't necessarily new inf*o." In contrast, participants with higher AIM ratings were more likely to provide positively valanced free responses. For example, one participant wrote, "*Learning that a lot of the behaviors I had been engaging in (seeking reassurance, avoiding talking/thinking about vomit) would actually reinforce my fear influenced me to try to reduce these behaviors*." Another participant with higher AIM ratings wrote, "*I liked learning about how the avoidance and safety behaviors associated with emetophobia are actually reinforcing some of the anxiety that is felt. It makes a lot of sense. I actively tried to remind myself of this while I was on vacation with my family (where I have a lot of anxiety about others throwing up around me with drinking, being on a boat, eating food that's been sitting out too long, etc). I definitely still struggled with anxiety in those situations but tried to lessen my safety behaviors. I also tried to remind myself that throwing up is a method of the body getting rid of a toxin (trying to view it in a positive way is very difficult but at least I'm getting these types of thoughts rolling)*."

IV. DISCUSSION

To date, no research has examined the impact of CBT-based psychoeducation interventions (PIs) on symptoms of emetophobia despite ample evidence supporting PIs among individuals with anxiety disorders. Therefore, the current study assessed the unique contributions and efficacy of a brief, telehealth CBT-based PI. Specifically, the current study aimed to examine the impact of PI across two conditions (active intervention and control) and time periods (pre-intervention and post-intervention) related to symptoms of emetophobia and perceived acceptability.

Partially consistent with study hypotheses, results of the mixed model ANOVA reflected a longitudinal reduction in emetophobia symptoms across the two time periods of pre- and post-intervention. Further, post-intervention results reflected a large effect size for SPOVI scores and a medium effect size for EmetQ-13 scores, suggesting participants reported more significant improvement in cognitive symptoms of emetophobia than behavioral. It should be noted that, though symptoms significantly improved *statistically*, the severity of symptoms remained clinically significant (i.e., above the clinical cut-off) on both measures. Interestingly, symptoms were not differentially impacted related to condition (active intervention or control), nor was there a significant interaction effect among time and condition. Notably, findings were replicated across both measures of emetophobia symptoms (SPOVI and EmetQ-13). Overall, independent of condition, results reflect the impact of time (i.e., 30 days in the current study) on the statistically significant reduction of cognitive and behavioral symptoms of emetophobia. In contrast, results indicate no evidence to support meaningful change of symptoms of emetophobia

related to either treatment condition. As such, results indicate a significant temporal reduction in symptoms over a brief duration of time across conditions and provide initial support for the effectiveness of a brief, PI in this population. However, it is important to consider potential contributing factors to this reduction. One such contributing factor may be the nature of the study design, which employed PIs for both the active and control conditions, as opposed to waitlist control (delayed treatment) or no-treatment groups (Patterson et al., 2016). Another factor that may impact temporal symptom reduction is the natural course of illness (e.g., transient, recurrent nature and regression towards the mean) observed in psychopathology, including anxiety sensitivity and anxiety disorders (Beesdo-Baum & Knappe, 2012; Patterson et al., 2016; Rosellini et al., 2011). To further understand the contributions of time, it may be beneficial to examine longitudinal symptoms across a larger duration of time, such as one- and two-year follow-ups, and/or with the addition of a no-treatment or waitlist condition(s).

Related research with similar design paradigms may also be examined to better understand the present results. Among anxiety disorders, research has demonstrated the significant main effects of time (e.g., Johnston et al., 2011; O'Shannessy et al., 2023; Silverman et al., 1999) and condition (e.g., Norr et al., 2017; Wong et al., 2016) on reduction of symptoms in intervention studies. Fewer studies have examined efficacy of PIs, and those that have examined PIs have targeted transdiagnostic symptoms of anxiety disorders (i.e., anxiety sensitivity and intolerance of uncertainty) among analog or at-risk samples (i.e., individuals with heightened yet subclinical symptoms; Newby et al., 2018; Papini et al., 2022; Shapiro et al., 2022). For example, Papini and colleagues (2022) examined efficacy of a digital, self-guided PI versus waitlist control designed to target anxiety sensitivity symptoms among undergraduate students with heightened anxiety sensitivity. Results demonstrated main effects of time and

condition on anxiety sensitivity symptom reduction from pre-intervention through two-week follow-up (Papini et al., 2022). A recent study by Shapiro and colleagues (2022) examined the impact of a PI designed to target intolerance of uncertainty (IU PI) versus control group (health-focused PI) among undergraduate college students with heightened IU scores. Results demonstrated a significant reduction in intolerance of uncertainty symptoms at the one-month follow-up among participants in the intervention condition (Shapiro et al., 2022). Therefore, in contrast to present results, available studies suggest brief, digital or internet-based PIs have a significant impact on the reduction of anxiety-related symptoms via main effects of time and group.

One possible contribution to the aforementioned discrepancy and a critical difference of the current study is the clinical nature of the sample. Over 93% of participants in the present study reported symptoms well-above the recommended clinical cutoff on both cognitive and behavioral measures of emetophobia. Additionally, the age range of participants reporting symptoms (18 to 76 years, M= 28.41) is reflective of the longstanding and persistent nature of emetophobia symptoms and associated psychopathology frequently observed in the literature (Höller et al., 2013; Keyes et al., 2017; Lipsitz et al., 2001; Van Hout & Bouman, 2012; Wu et al., 2015). In contrast, comparable studies used an analog sample of at-risk undergraduate students with heightened transdiagnostic symptoms (intolerance of uncertainty and anxiety sensitivity) assessed via self-report measures (Papini et al., 2022; Shapiro et al., 2022). As such, this discrepancy among samples related to clinical severity may be an important element to consider when evaluating present results in the context of available research. Indeed, it may be that individuals with higher levels of psychopathology or certain characteristics (e.g., duration individuals have experienced symptoms) do not benefit from PIs; rather, they may receive

clinically significant benefit among more intensive interventions (e.g., multiple sessions of CBT) beyond psychoeducation.

As research has evidenced significant associations of emetophobia with anxiety sensitivity and depression (e.g., Riddle-Walker, et al., 2016; Sykes et al., 2016), the current study examined whether time and condition led to a reduction in emetophobia symptoms when controlling for depression and anxiety sensitivity. Across both cognitive and behavioral measures of emetophobia (i.e., SPOVI and EmetQ-13), time was no longer a significant main effect when controlling for anxiety sensitivity and depression. Of note, with the dependent variable of cognitive emetophobia symptoms (i.e., SPOVI), time was observed to be approaching significance when controlling for anxiety sensitivity and depression. Interestingly, this trend towards significance suggests cognitive symptoms, as opposed to behavioral symptoms, may be differently impacted by PIs. Future research may benefit from further examination of the phenomenology and comorbidities associated with various manifestations of emetophobia symptoms (e.g., cognitive, behavioral, physical). In sum, similar to the mixed model ANOVA conducted, results reflected no significant main effect of condition or interaction among condition and time across both measures of emetophobia, when controlling for covariates.

Interestingly, among participants in this sample, anxiety sensitivity was a significant covariate for both cognitive and behavioral measures of emetophobia across condition and time. Consistent with extant research, this finding illustrates the transdiagnostic nature of anxiety sensitivity as a significant consideration for individuals with symptoms of emetophobia (Riddle-Walker, et al., 2016). Given the consistency of anxiety sensitivity symptoms across both measures of emetophobia and both time and condition, results support the theory that individuals with emetophobia are more likely to experience and fear somatic arousal (Keyes et al., 2017).

Also consistent with previous research (Sykes et al., 2016), depression was a significant covariate among cognitive symptoms of emetophobia across condition and time, though not among behavioral symptoms. This suggests individuals with comorbid symptoms of depression may be more likely to identify cognitive experiences (e.g., worries about self or others vomiting) of emetophobia than behavioral (e.g., avoidance of specific locations). As symptoms of depression and anxiety sensitivity remained consistently significant across both time points and conditions, this suggests the present sample is reflective of a high level of psychopathology. For instance, 63% (time point one) and 62% (time point two) of individuals consistently reported significant symptoms of depression (i.e., symptoms above the clinical criteria for within normal limits), in addition to high clinical severity of both emetophobia and anxiety sensitivity symptoms. Given the nature of this preliminary study, the clinical covariates of depression and anxiety sensitivity were not used to exclude participants based on symptom severity; however, future research on PIs for emetophobia may benefit from developing clinical cutoff and/or exclusion criteria. In so doing, this may offer insight into which participants (if any) are an optimal fit for PIs, such as individuals with mild to moderate symptoms of emetophobia and related psychopathology, who may demonstrate clinically significant improvement in symptoms.

Efficacy of the brief PI may be examined with multiple facets, such as perceived acceptability, attrition rates, and feasibility. When examining the perceived acceptability of the PIs using the AIM, results evidenced no significant change across variables of interest. Said differently, all participants considered the PIs similarly acceptable on the AIM (active: time point one and two (M=13.15, M=13.23) and control: time point one and two (M=12.79, M=12.05), range of 0 through 16), regardless of condition or time. Participants in either group did not identify significant differences of intervention desirability. Interestingly, despite multiple

reminder notifications and the opportunity of a study incentive (evidenced to be effective in literature, Khazanov et al., 2022; Pederson et al., 2021), a nominal degree of attrition was observed from the first time point to the follow-up. Specifically, of the participants who successfully completed the entirety of the first time point (*N*=269), 139 participants did not return for the follow-up portion of the study and 40 participants did not successfully complete the follow-up portion of the study. Despite the study attrition, it should be noted that the present study was well-powered. Further contributing to the efficacy of PIs is the ability to target individuals with emetophobia. For instance, the present study had the intended effect of reaching a large population. Though the number of individuals who viewed the study announcement on recruitment websites cannot be quantified, 865 individuals continued to the Qualtrics page to learn more about the study. This large reach to the target audience reflects both efficacy (e.g., individuals interested in PIs, perceived acceptability) and feasibility (e.g., accessibility, cost-effectiveness). The present study employed a single session, internet-based PI evidenced to be cost-effective in the literature (e.g., Massoudi et al., 2019; Scott et al., 2009). Further, the study was cost-effective as resources used were acquired free of charge through the university (e.g., Qualtrics, PowerPoint, Zoom) and incentive funds of $50 were contributed by the primary investigator. Future research may benefit from study replication to provide a greater understanding of feasibility. As such, there are a variety of factors that should be considered when estimating the acceptability of the PI in the current study.

In addition to quantitative analysis, it is beneficial to qualitatively examine participants' responses. The majority of participants (active: 91.5%, *N*= 43; control: 81.4%, *N*= 35) elected to provide qualitative information via a free response question ("What segment did you find to be the most helpful?"). Across conditions, the fifth segment, or the discussion of coping skills and

demonstration of PMR, was identified as "the most helpful" segment, as reported by 32.3% of participants. Interestingly, the second highest rating was identified as multiple segments by 14.4% of participants. Of the participants who highlighted the benefit from multiple segments, all participants identified segment five as one of the most helpful segments of the PI. Interestingly, despite lack of clinically significant symptom reduction of emetophobia, a large portion of participants identified the PI as overall favorable, with most benefit derived from discussion of coping skills and PMR demonstration. Finally, a small minority of participants did not report benefit from any segment. Overall, participants found both conditions highly acceptable, which suggests both PIs focused on either emetophobia or mental health were similarly perceived as an appropriate intervention. To further understand participants' perception of the PI, future research may benefit from clearly defining "helpful" (e.g., improvement in anxiety-related behaviors), additional perception measures (e.g., quality of life measures). This finding highlights the positive perception of telehealth-based interventions and, in concert with results demonstrating longitudinal symptom reduction, provides initial support for this intervention format among individuals with emetophobia.

When understanding results of the present study, it is necessary to consider the limitations. One notable consideration is the context of participant recruitment. For instance, participants were internet support group users who discovered the study on emetophobia-related social media and forums. Though Reddit and other social media platforms have been validated research platforms and have the unique capacity to reach a wider audience (e.g., worldwide, or individuals not likely to engage in research studies or treatment) than traditional methods of sampling, there are some important considerations (Luong & Lomanowska, 2022; Silberman & Record, 2021). For instance, the nature of social media and internet forums is such that often

evoke emotional responses wherein indivfiduals commonly receive social support from other individuals with similar experiences or symptoms (Davis & Graham, 2021). Interestingly, such social support often occurs by way of seeking answers for symptoms and experiences or reassurance-seeking, which may serve to reinforce symptoms of anxiety (e.g., "Worker touched my ice cream… I've been anxious ever since. I'm worried she had noro on her fingers from handling money or something. I just need some reassurance" via r/Emetophobia on Reddit; Tibber & Silver, 2022). Indeed, the internet forum on Reddit dedicated to emetophobia has required users to identify "flair(s)" (i.e., descriptors used to categorize the type of post) before post submission (e.g., "seeking reassurance" and "potentially triggering"). Further, a new Reddit forum (as well as a group on Facebook) was developed for individuals with emetophobia that explicitly prohibits reassurance seeking. As research has documented the impact of frequent social media use on mental health and treatment outcomes (Boer et al., 2021; Brown et al., 2021; Lin et al., 2021), it may be beneficial to examine the frequency, duration, and context (i.e., adaptive vs. maladaptive, reassurance seeking) of social media use as it relates to both symptom severity and efficacy of PIs. In addition, the use of social media for reassurance seeking may be an interesting factor to examine in future research as it relates to both symptom severity and efficacy of intervention. Therefore, the context in which participants were recruited using social media support groups and forums is an important consideration in the current study.

Another interesting consideration and potential limitation is the level of clinical severity and chronicity of symptoms among participants in the present sample. Indeed, participant characteristics are reflective of available samples in the literature and highlight the consequent barriers individuals with emetophobia often face when seeking treatment (e.g., comorbid psychopathology, avoidance, or resistance of treatment; Keyes et al., 2017; Lipsitz et al., 2001;

Van Hout & Bouman, 2012). However, the severity of symptoms among variables of interest (e.g., 93% of participants with clinical levels of emetophobia) may have impacted the effectiveness of the PI. Related to the recruitment procedures of the present study, Park and colleagues (2018) qualitatively reviewed thematic similarities across three mental health communities on Reddit: r/Anxiety, r/Depression, and r/PTSD. Results indicated that individuals among the r/Anxiety and r/PTSD groups were more likely to experience symptoms over a longer duration than compared with individuals in r/Depression (Park et al., 2018). As such, the efficacy of the present PI may have been affected by participant characteristics (e.g., chronicity, severity). Additional research may examine whether individuals with mild to moderate symptoms of emetophobia and/or anxiety sensitivity may be an optimal fit for a psychoeducation only intervention.

Another limitation of the sample pertains to the lack of formal assessment and diagnosis (i.e., by a trained clinician, semi-structured interview) of emetophobia and related psychopathology. Though the present study implemented symptom assessment via self-report measures, future iterations of PI for emetophobia may consider the addition of formalized diagnostic assessment or observational and/or functional measures to enhance the validity of reported symptoms (e.g., limit social desirability response, Smeding et al., 2017). Further, integrating formal assessment would not only provide diagnostic accuracy for emetophobia, but also for any comorbid psychopathology, which have been identified as moderators in effectiveness of internet-based interventions (Ebert et al., 2013; Nordh et al., 2022). Additionally, given the significant covariates of depression and anxiety sensitivity, it may be beneficial to formally assess for these symptoms to aid in potential exclusion of participants with increased severity (e.g., moderate to high symptoms). Finally, though emetophobia symptoms

were the main variable of the study, it may be beneficial to assess quality of life symptoms, as well as overall knowledge of emetophobia, to provide additional context on the effectiveness of the PI. Therefore, future research may benefit from alternate and expanded methodology wherein participants receive formalized diagnostic assessment. The reason for this is twofold; for example, recruiting participants from anxiety disorder clinics or outpatient facilities, whether virtual or in-person, would allow for formal diagnostic process and facilitate identification of an optimal cut-off level of symptoms for participant fit of the PI.

Finally, another element to consider and potential limitation is the format of the PI. In the present study, the PIs were designed as "simple" interventions, as opposed to more in-depth, theory-based "skilled" interventions (Colom, 2011), and were administered passively (i.e., without provider guidance; Donker et al., 2009). The PIs also occurred via a single-session telehealth audiovisual pre-recorded video in an individual format, which was a cost-effective option employed with a recruitment process designed to reach a wide audience beyond traditional sampling. While a large body of research demonstrates the effectiveness of "simple," passive, telehealth, and individual formats for PIs (e.g., Bevan-Jones et al., 2018; Frias et al., 2020; Zippan et al., 2020), this format has certain limitations. For example, a single session individualized, virtual format limits the ability for participants to seek social support via group setting and does not allow for discussion among participants and providers. Therefore, an interesting next step may be to examine the utility of the present PI among multiple sessions in a group-based format among individuals with emetophobia. This adaptation would facilitate group discussion around already identified topics and may promote further symptom reduction. For example, as the segment related to coping skills and PMR was the most favored, future iterations may benefit from more in-depth discussion related to coping skills among group members (e.g.,

open discussion regarding coping skills to aid in approach rather than avoidance). Lastly, one benefit of PIs not assessed in the present study is psychoeducation knowledge. As such, additional iterations would benefit from assessing level of participant knowledge of emetophobia pre- and post-intervention.

Future research may also include experimental dismantling studies to investigate the unique impact of PIs among individuals with emetophobia. For example, the current study employed a mental health PI as the control condition, rather than a waitlist or no-treatment control. Further, as previously mentioned, both conditions received the segment related to coping skills and PMR. Given that this segment is largely the most favored across condition, it may serve as a confound related to the demonstrated time-related symptom reduction. As such, a next step may be to examine the PI for emetophobia (active intervention condition) compared with a waitlist control group, as the mental health PI control group may have impacted participants' symptoms via psychoeducation and coping skill discussion. Additionally, it may be beneficial for researchers to compare groups of individuals diagnosed with emetophobia who received a PI and those who did not (i.e., waitlist control) within the course of a larger CBT treatment protocol. Both alterations to the study paradigm may provide insight into the importance of psychoeducation instruction. Taken together, the results and limitations of the present study provide preliminary data regarding the use of PIs among emetophobia and may be theoretically understood among specific phobias broadly.

i. Conclusion

The current study developed and implemented a novel, single-session, telehealth CBT-based PI for individuals with emetophobia. The study employed a quasi-experimental paradigm wherein individuals who self-identified as having emetophobia were randomly assigned to two

conditions of similar length: the active intervention (emetophobia focused PI) or control condition (mental health focused PI). Results found that emetophobia symptoms declined across time, from the intervention to one-month follow-up, though the conditions themselves were not related to such symptom reduction. Further, when significant covariates of anxiety sensitivity and depression were considered, neither time nor group contributed to symptom improvement. Finally, both conditions were similarly accepted by participants, across time and condition. Despite the null findings in terms of PI condition, results nonetheless contribute to the literature by demonstrating a longitudinal reduction in emetophobia symptoms and the overall acceptability of the PI in this population. Future investigation would benefit from recruitment of a diverse clinical sample, formal assessment of psychopathology to determine optimal participant fit, and alterations to study design (e.g., addition of no-treatment or waitlist control group). In addition, it may be interesting to adapt the current PI to be administered in a multiple-session group-based format (in person or telehealth) and examine the effect on emetophobia symptoms. Overall, the present study adds an important first step regarding the treatment of emetophobia, both in terms of dismantling the importance of psychoeducation in CBT-based treatments, as well as feasibility and desirability of telehealth-administration.

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LIST OF APPENDICES

APPENDIX A: TABLE ONE

Table 1. Descriptive Statistics for Continuous Variables

	1	2	3	4	5	6	7	8	M (*SD*)
1. SPOVI T1	-	.78***	.66***	.49***	.46***	.34**	.49***	.41***	34.37 (13.73)
2. SPOVI T2		-	.46***	.63***	.45***	.48***	.37***	.55***	29.76 (13.92)
3. EmetQ-13 T1			-	.72***	.39***	.28**	.55***	.34***	36.53 (8.99)
4. EmetQ-13 T2				-	.31**	.34***	.44***	.52***	34.84 (8.53)
5. DASS-21-D T1					-	.77***	.58***	.47***	7.67 (5.59)
6. DASS-21-D-T2						-	.44***	.62***	7.64 (5.72)
7. ASI T1							-	.64***	34.98 (14.88)
8. ASI T2								-	33.22 (15.22)

Note: *$p < .05$, **$p < .01$, ***$p < .001$

N= 508; T1= Time one; T2= Time two; SPOVI = Specific Phobia of Vomiting Inventory; EmetQ-13= Emetophobia Questionnaire; DASS-21-D = Depression, Anxiety, Stress Scale -21, Depression Subscale; ASI= Anxiety Sensitivity Inventory

APPENDIX B: TABLE TWO

Table 2. Means, Standard Deviations, and Mixed Model ANOVA Statistics for Study Variables

Variable	Active Intervention		Control Condition		ANOVA			
	M	*SD*	M	SD	Effect	*F* ratio	*df*	η^2
SPOVI								
Time 1	35.98	12.69	32.60	14.73	C	.710	1, 88	.01
Time 2	30.36	14.95	29.09	12.85	T	21.93	1, 88	.20***
					C*T	1.17	1, 88	.01
EmetQ-13								
Time 1	38.06	7.77	34.86	9.99	C	3.01	1, 88	.03
Time 2	36.13	9.08	33.44	7.75	T	5.80	1, 88	.06*
					C*T	.14	1, 88	.002

Note: *$p < .05$, **$p < .01$, *** $p < .001$
N= 90; ANOVA= Analysis of Variance; C= condition; T= time; SPOVI= Specific Phobia of Vomit Inventory; EmetQ-13= Emetophobia Questionnaire

APPENDIX C: TABLE THREE

Table 3. Means, Standard Deviations, and Mixed Model ANCOVA Statistics for Study Variables

Variable	Anxiety Sensitivity				Depression			
	SS	*df*	*F* ratio	η^2	SS	*df*	*F* ratio	η^2
SPOVI								
C	710.87	1, 86	5.63	.06*	1043.86	1, 86	8.23	.09**
T	153.59	1, 86	3.92	.04*	64.91	1,86	1.56	.02
EmetQ-13								
C	452.88	1, 86	9.77	.10**	125.01	1, 86	2.70	.03
T	5.92	1, 86	.28	.003	23.76	1, 86	1.12	.01

Note: **p* < .05, ***p* < .01, *** p< .001
N= 90; ANCOVA= Analysis of Covariance; C= condition; T= time; SS= sum of squares, type III; SPOVI= Specific Phobia of Vomit Inventory;
EmetQ-13= Emetophobia Questionnaire

APPENDIX D: TABLE FOUR

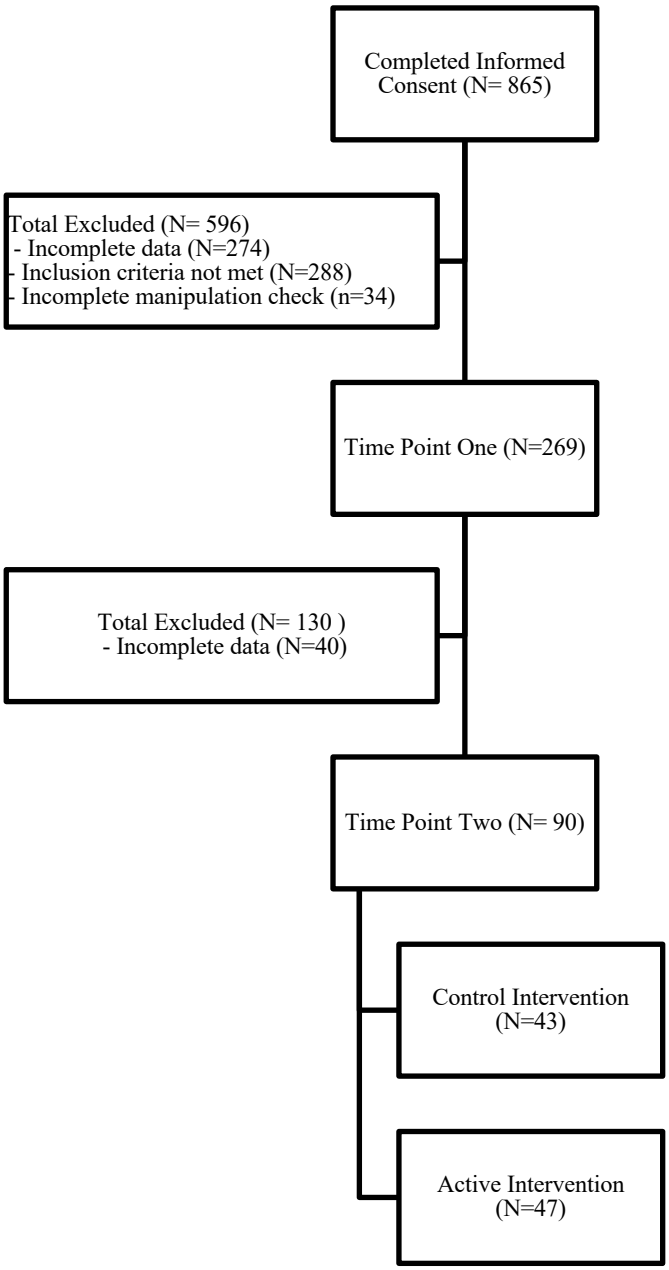
Table 4. Means, Standard Deviations, and Mixed Model ANOVA Statistics for Study Variables

Variable	Active Intervention		Control Condition		ANOVA			
	M	*SD*	M	SD	Effect	*F* ratio	*df*	η^2
AIM								
Time 1	13.15	3.84	12.79	3.43	C	1.13	1, 88	.01
Time 2	13.23	4.24	12.05	4.41	T	.59	1, 88	.01
					C*T	.93	1, 88	.01

Note: *$p < .05$, **$p < .01$, *** $p < .001$
N= 90; ANOVA= Analysis of Variance; C= condition; T= time; AIM= Acceptability of Intervention Measure

APPENDIX E: FIGURE ONE

Figure 1. Participant Flow Chart



APPENDIX F: THE EMETOPHOBIA QUESTIONNAIRE – 13

The following questionnaire is designed to measure the severity of fear of vomiting over the past week, including today. Please read each question carefully and, on the 1 to 5 scale indicate your response by circling the appropriate number next to each question.

1- strongly disagree; 2- disagree; 3-unsure; 4-agree; 5- strongly agree

1. I avoid air travel because I may become nauseous/vomit.
2. I avoid other forms of transport because I may become nauseous/vomit.
3. I avoid sea travel (boats, etc.) because I may become nauseous/vomit.
4. I avoid places where there are no facilities to cater if I become nauseous/vomit.
5. I avoid places where there is no medical attention, because I may become nauseous/vomit.
6. I avoid fast-moving activities like rides at the theme park, because I may vomit.
7. If I see vomit, I may be sick myself.
8. If I smell vomit I may be sick myself.
9. Exposure to vomit can cause sickness and/or illness.
10. I avoid adults who may be likely to vomit.
11. I avoid children who may be likely to vomit.
12. I avoid places where others may vomit.
13. I notice physical anxiety symptoms when exposed to vomit.

APPENDIX G: THE SPECIFIC PHOBIA OF VOMITING INVENTORY

Please tick the box that best describes how your fear of vomiting has affected you OVER THE PAST WEEK, INCLUDING TODAY.

0- not at all; 1- a little; 2- often; 3- a lot; 4- all the time

1. I have been worrying about myself or others vomiting
2. I have been avoiding adults or children because of my fear of vomiting
3. I have been avoiding situations or activities because of my fear of vomiting
4. I have been trying to find reasons to explain why I feel nauseous
5. I have been avoiding objects that other people have touched because of my fear of vomiting
6. I have been focused on whether I feel ill and could vomit rather than on my surroundings
7. I have been looking at others to see if they may be ill and vomiting
8. If I think I am going to vomit, I do something to try to stop myself from vomiting
9. I have been trying to avoid or control any thoughts or images about vomiting
10. I have been restricting the amount or type of food I eat or alcohol I drink because of my fear of vomiting
11. I have been feeling nauseous
12. I have been thinking about how to stop myself or others from vomiting
13. I have been seeking reassurance that I or others will not be ill and vomit
14. I have escaped from situations because I am afraid I or others may vomit

APPENDIX H: THE DEPRESSION, ANXIETY AND STRESS SCALE – 21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

0- did not apply to me at all; 1- applied to me to some degree, or some of the time; 2- applied to me a considerable degree or a good part of the time; 3- applied to me very much or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (e.g. in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

APPENDIX I: ANXIETY SENSITIVITY SCALE – 3

Please rate each item by selecting one of the five answers for each question. Please answer each statement by circling the number that best applies to you.

0- very little; 1- a little; 2- some; 3- much; 4- very much

1. It is important not to appear nervous.
2. When I cannot keep my mind on a task, I worry that I might be going crazy.
3. It scares me when my heart beats rapidly.
4. When my stomach is upset, I worry that I might be seriously ill.
5. It scares me when I am unable to keep my mind on a task.
6. When I tremble in the presence of others, I fear what people might think of me.
7. When my chest feels tight, I get scared that I won't be able to breathe properly.
8. When I feel pain in my chest, I worry that I'm going to have a heart attack.
9. I worry that other people will notice my anxiety.
10. When I feel "spacey" or spaced out I worry that I may be mentally ill.
11. It scares me when I blush in front of people.
12. When I notice my heart skipping a beat, I worry that there is something seriously wrong with me.
13. When I begin to sweat in a social situation, I fear people will think negatively of me.
14. When my thoughts seem to speed up, I worry that I might be going crazy.
15. When my throat feels tight, I worry that I could choke to death.
16. When I have trouble thinking clearly, I worry that there is something wrong with me.
17. I think it would be horrible for me to faint in public.
18. When my mind goes blank, I worry that there is something terrible wrong with me.

APPENDIX J: ACCEPTABILITY OF INTERVENTION MEASURE

1- completely disagree; 2- disagree; 3- neither agree nor disagree; 4- agree; 5- completely agree

1. [The intervention] meets my approval.
2. [The intervention] is appealing to me.
3. I like [the intervention].
4. I welcome [the intervention].

JENNIFER A. PETELL, PH.D.
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EDUCATION

Doctor of Philosophy, Clinical Psychology **University of Mississippi**
[June 2023] Oxford, MS
APA accredited
Dissertation Title: *Plot twist: Vomiting is good! Online psychoeducational intervention among internet support group users*

Predoctoral Internship, Clinical Psychology **LSU-HSC**
[July 2022 – June 2023] New Orleans, LA
APA accredited
Louisiana State University Health Sciences Center (LSU-HSC), Adult Track

Master of Arts, Clinical Psychology **University of Mississippi**
[December 2019] Oxford, MS
APA accredited
Thesis Title: *Behavioral similarities and differences among symptoms of emetophobia, disordered eating, and disgust*

Bachelor of Science, Psychology **Purdue University**
[May 2016] West Lafayette, IN
Honors: Cum Laude
Undergraduate Minor(s): English, African American Studies

LICENSURE & CERTIFICATIONS

Examination for Professional Practice in Psychology (EPPP) **[2020]**
Passed at the Doctoral Level
National Provider Identifier **[2020]**
NPI #1710505268

APA Training Certification in Telepsychology Best Practices [2020]

Clinical Evaluation and Care: Cultural Competencies and Documentation
Technology: Video, Email, Text Messaging & Apps
Legal, Regulatory & Ethical Rules of the Road
Getting Paid: Reimbursement Strategies & Marketing Your Professional Services Online

CLINICAL EXPERIENCE

Predoctoral Intern Therapist **Louisiana State University, Health Sciences Center**
[2022 – 2023] *New Orleans, Louisiana*

Responsibilities: Provide psychotherapy for individuals presenting for individual and group therapy in both inpatient and outpatient settings, conduct weekly individual therapeutic sessions with adults in a fluctuating patient population (i.e.: age, race, disorder), provide daily group therapy sessions for a psychiatric inpatient unit, maintain weekly progress notes and updated patient files, and participate in weekly supervision meetings from a licensed psychologist. Provide brief psychotherapy treatments in the context of individuals seeking bariatric surgery. Collaborate with interdisciplinary treatment teams (e.g., psychiatrists, bariatric surgeons, medical students, nurses). *Anticipated:* Provide brief psychotherapy in the context of individuals hospitalized for severe burn or related injuries.
Supervisor(s): Danielle Cohn, Ph.D.; Lindsey Poe, Psy.D.

Predoctoral Intern Assessor **Louisiana State University, Health Sciences Center**
[2022 – 2023] *New Orleans, Louisiana*

Responsibilities: Conduct comprehensive psychological assessments and provided integrated reports for adults presenting with variety of symptoms, including intellectual and developmental disabilities, neurological concerns and disorders, attention-deficit/hyperactivity disorder, psychological and comorbid medical disorders. Provide brief psychological and neuropsychological assessments for adults on a psychiatric inpatient unit as clinically indicated and/or as referred by interdisciplinary team. Administer presurgical psychological evaluations within an interdisciplinary bariatric clinic, provide follow-up evaluations to assess for surgical eligibility. Collaborate with interdisciplinary treatment teams (e.g., psychiatrists, bariatric surgeons, medical students, social workers, nurses). *Anticipated:* Provide brief diagnostic evaluations in the context of individuals hospitalized for severe burn or related injuries or severe physical trauma in a level one trauma center.
Supervisor(s): Danielle Cohn, Ph.D.; Lindsey Poe, Psy.D.

Assistant to Director **University of Mississippi, Psychological Services Center**
[2021- 2022] *University, MS*

Responsibilities: Received and screened patient referrals; coordinated psychotherapy intakes with clinicians; maintained current and terminated client files; reviewed intake, termination, and progress notes for completion; maintained insurance for all clinicians; oriented/supervised new clinicians to clinic functions and noted maintenance; audited digital patient files; disseminated available services in the community; and aided clinic director.
Supervisor(s): Kristin Austin, Ph.D.

Graduate Student Therapist **University of Mississippi, Psychological Services Center**
[2018- 2022] *University, MS*

Responsibilities: Conducted intake assessments of individuals presenting for individual or group therapy, conducted weekly individual therapeutic sessions with children and/or adults in a fluctuating patient population (i.e.: age, race, disorder), maintained weekly progress notes and updated patient files, and participated in weekly supervision meetings from a licensed psychologist.

Supervisor(s): Danielle Maack, Ph.D.; Scott Gustafson, Ph.D., ABPP; Laura Johnson, Ph.D.; Sarah Bilsky, Ph.D., Kristin Austin, Ph.D., Stefan Schulenburg, Ph.D.

Graduate Student Assessor **University of Mississippi, Psychological Assessment Clinic**
[2018- 2022] *University, MS*

Responsibilities: Conducted comprehensive psychological assessments and provided integrated reports for individuals presenting with variety of symptoms, including intellectual and developmental disabilities, learning disorders, attention-deficit/hyperactivity disorder, and psychological disorders. Administered presurgical psychological assessments and provided integrated reports for medical providers for individuals seeking bariatric surgery.

Supervisor(s): Kristin Austin, Ph.D., Scott Gustafson, Ph.D., ABPP

Therapist Intern **Communicare**
[2020- 2021] *Oxford, MS*

Responsibilities: Conducted intake interviews and provided weekly individual therapy sessions across the lifespan with an array of psychological disorders (such as serious mental illness, substance abuse disorders, and anxiety disorders) in a community mental health setting, maintained weekly progress notes and updated patient files, worked among multiple care providers, and participated in weekly supervision meetings from a licensed psychologist. Collaborate with interdisciplinary treatment teams (e.g., psychiatrists, social workers).

Supervisor(s): Dixie Church, LMFT; Scott Gustafson, Ph.D., ABPP; Laura Johnson, Ph.D., Danielle Maack, Ph.D., Kristin Austin, Ph.D.

Therapist Volunteer **Panola Behavioral Hospital**
[Sep. 2019 to Mar. 2019; Mar. 2021 to June 2021] *Batesville, MS*

Responsibilities: Aided an intensive inpatient mental health hospital by providing group therapy in an adult acute unit with varying psychopathology and demographics, conducted biopsychosocial and intake assessments, collaborated with interdisciplinary team, and participated in weekly supervision meetings from a licensed psychologist. Collaborate with interdisciplinary treatment teams (e.g., psychiatrists, nurses, social workers).

Supervisor(s): John Young, Ph.D.

Clinical Assistant **Level Up Consulting**
[2020- 2021] *North Tippah & South Tippah Counties, MS*

Responsibilities: Synthesized the data collection of children (Pre-K through grade 12) with intellectual, developmental or emotional disabilities; and create functional behavioral

analyses and behavior intervention plans for schools in accordance with Applied Behavioral Analysis (ABA). Collaborate with interdisciplinary staff (e.g., social workers, teachers).
Supervisor(s): Shannon Hill, Ph.D., BCBA-D, LBA, LPC

Behavioral Analysis Intern **Level Up Consulting**
[2019- 2020] *North Tippah & South Tippah Counties, MS*

Responsibilities: Conducted behavioral data analysis in accordance with Applied Behavioral Analysis (ABA); weekly data collection; conducting and writing functional behavioral analyses for children (Pre-K through 12) with intellectual, developmental, or emotional disabilities; create behavioral intervention plans to be utilized in the school systems; and assist in functional analysis for adults with intellectual disability. Collaborate with interdisciplinary staff (e.g., social workers, teachers).
Supervisor(s): Shannon Hill, Ph.D., BCBA-D, LBA, LPC

Psychological and Behavioral Health Intern **North Mississippi Regional Center**
[2018- 2019] *Oxford, MS*

Responsibilities: Provided weekly individual therapeutic sessions to individuals with severe to profound intellectual or developmental disabilities, conduct cognitive assessments (intellectual, achievement, and adaptive testing) and diagnose individuals suspected to have learning or intellectual disabilities, conduct re-evaluations of cognitive assessments on individuals diagnosed with intellectual or developmental disability, maintain campus database of aberrant behaviors, create individualized behavioral programs to address aberrant behaviors, work with multiple care providers, and participant in weekly supervision meetings from a licensed psychologist. Collaborate with interdisciplinary treatment teams (e.g., nurses, social workers).
Supervisor(s): Stefan Schulenburg, Ph.D.; Mark Wildmon, Ph.D., BCBA-D

Mental Health Clinician **St. Vincent Hospital Stress Center**
[2016-2017] *Indianapolis, IN*

Responsibilities: *Prior to entering graduate school*: assisted in the efficiency of daily operations among a multidisciplinary team on six units in an intensive in-patient mental health hospital, to lead multiple group therapy sessions each day that are accurately modified to the diagnoses and presentations of patients in attendance, to provide psychological aid to a frequently fluctuating diverse patient population (i.e.: age, race, disorder), and facilitate positive biopsychosocial advancements through constructive conversations, coping skills, and psychological education among patients. Collaborate with interdisciplinary treatment teams (e.g., psychiatrists, nurses, social workers).
Supervisor(s): Haley Minor, RN

TRAINING & SUPERVISION EXPERIENCE

Predoctoral Intern Supervisor **Louisiana State University, Health Sciences Center**
[2022 – 2023] *New Orleans, Louisiana*

Responsibilities: Provide evidence-based clinical supervision to a third-year psychiatry resident with psychotherapy cases, aid resident in acquiring developmentally appropriate psychotherapy skills, and assist in professional development skills. Collaborate and supervise within a cross-discipline context.
Supervisor(s): Sandy Hyatt, Psy.D., Nathan Brown, Psy.D.

Assistant to Director **University of Mississippi, Psychological Services Center**
[2021- 2022] *University, MS*

Responsibilities: Oriented/supervised new clinicians to clinic functions, such as opening and closing the clinic, intercepting walk-in patients, as well as writing intake, termination and progress notes. Supervised clinicians via auditing patient files.
Supervisor(s): Kristin Austin, Ph.D.

Course Presenter **Central Reach, LLC**
[April 2020]

Title: *Emotion disturbances and psychosocial and behavioral needs of children through young adults*
Responsibilities: Provided online continued education credits and training experience for ABA practitioners and clinicians regarding DSM-5 diagnoses and clinical presentations among children via audiovisual presentation, quizzes, and supplemental materials.
Supervisor: Shannon Hill, Ph.D., BCBA-D, LBA, LPC

Assessment Training **North Mississippi Regional Center**
[September 2019] *Oxford, MS*

Responsibilities: Trained Masters-level staff members on how to conduct and write annual and bi-annual assessment reports for individuals with profound intellectual and developmental disabilities; provided training on ABC (antecedent/behavior/consequences) functional analysis and interpretation.
Supervisor(s): Mark Wildmon, Ph.D., BCBA-D

RESEARCH EXPERIENCE

Research Assistant (Graduate) **New Orleans Veterans Affairs**
DAT Laboratory **Department of Psychology**
[2022 - present] *Mentor:* Amanda Raines, Ph.D.

Research Focus: Investigate psychopathology (e.g., post-traumatic symptoms), transdiagnostic factors (e.g., anxiety sensitivity), and social (e.g., race) variables among U.S. Veterans with comorbid psychological and medical conditions.
Responsibilities: Assist in ongoing research including conceptualization of research questions and data analyses and contribute to manuscript preparation and text.

Principal Investigator **University of Mississippi**
ADEPT Laboratory **Department of Psychology**
[2021 – 2022] *Advisor:* Danielle J. Maack, Ph.D.

Title: *Plot twist: Vomiting is good! Online psychoeducational intervention among internet support group users*

Research Focus: Examined the efficacy of a novel, single session CBT-based psychoeducational intervention (PI) for individuals with symptoms of emetophobia using a telehealth modality.

Responsibilities: Compiled reliable and valid assessments to accurately measure a variety of symptoms, creating and designing a Qualtrics survey compiling all measures and additional questions, writing informed consent and study proposal for IRB approval, designing and curating information for PI intervention with audiovisual presentation, collecting data through multiple social media forums, and safely storing and analyzing collected data.

Principal Investigator **University of Mississippi**
ADEPT Laboratory **Department of Psychology**
[2019- 2021] *Advisor:* Danielle J. Maack, Ph.D.

Title: *Demystifying fear of vomiting: Psychological and associated factors from an online sample*

Research Focus: Examined novel cognitive and behavioral symptoms that may be exhibited in individuals who endorse symptoms of emetophobia on forums or social media pages dedicated to emetophobia.

Responsibilities: Compiled reliable and valid assessments to accurately measure a variety of symptoms, creating and designing a Qualtrics survey compiling all measures and additional questions, writing informed consent and study proposal for IRB approval, collecting data through multiple social media forums, and safely storing and analyzing collected data.

Research Assistant (Graduate) **University of Mississippi**
ADEPT Laboratory **Department of Psychology**
[2018- present] *Clinical Psychology:* Danielle J. Maack, Ph.D.

Title: *Individual differences, emetophobic (vomit) symptoms and behavioral tasks*

Research Focus: Examined the symptoms of emetophobia, emotion dysregulation, disordered eating, health anxiety, and disgust among undergraduate students with self-report measures, as well as investigating the degree to which participants will engage in behavioral approach tasks of stimuli associated with emetophobia.

- https://www.theadeptlab.com/about

Responsibilities: Assisted in ongoing research including obtaining both informed and debriefing consent, running participants through a variety of behavioral approach tasks

utilizing all five senses, training all undergraduate researchers to run participants, entering in all collected data, and maintaining weekly supply levels.

Research Assistant (Graduate) **Obstetrics-Gynecology Associates**
ADEPT Laboratory **Tupelo & Oxford, MS**
[2017- 2020] *Clinical Psychology:* Danielle J. Maack, Ph.D

Title: *Pregnancy Initiative*: *Integrating psychological practice in an OBGYN clinic*

Research Focus: Longitudinally examined the experiences of depression, anxiety, disgust, sleep, vomiting, and vomit phobia with self-report measures postnatally and over the course of pregnancy at OBGYN clinics; to integrate psychology in local health clinics.

Responsibilities: Assisted in ongoing research at multiple locations, including approaching potential participants and receiving appropriate informed consent, collecting and entering data, providing an interpretation of multiple measures through identifying participants with high anxiety and depression or suicidal thoughts to their respective OB doctors.

Research Assistant (Graduate) **Willow Pain Clinic, LLC**
SITH Laboratory **Oxford, MS**
[2018- 2019] *Clinical Psychology:* John Young, Ph.D.

Title: *Integrating evidence-based psychological practice in a chronic pain treatment clinic*

Research Focus: Examined the experiences of depression, anxiety, substance use (prescription and non) with self-report measures among patients with chronic pain at local pain clinic; to integrate psychology in local health clinics.

Responsibilities: Assisted in ongoing research, including approaching potential participants and receiving appropriate informed consent, collecting and entering data, providing an interpretation of multiple measures through identifying participants with high depression or suicidal thoughts to their respective medical doctors.

Research Assistant (Undergraduate) **Indiana University - Purdue University Indianapolis**
PRISM Laboratory **Department of Psychology**
[2016] *Clinical Psychology:* Tamika Zapolski, Ph.D.

Research Focus: Examined the relationship between substance abuse, criminal offenses, and racial disparities in high-risk, low SES communities. The relationships between past-month aggression, procedural or criminal injustices, and moral disengagement were also examined using the general strain theory. DBT treatment was also used in at-risk, largely minority youth as a possible preventative action against substance abuse and criminality.

Responsibilities: Assisted in a variety of literary searches with the goal of publishing a concise and correct academic paper, provided assistance in collecting materials necessary for smooth data collection, contributed to pre- and post- data collection with at-risk youth, aided in administering DBT lessons to youth in multiple school-based sessions, and participated in weekly laboratory meetings.

Research Assistant (Undergraduate) **Purdue University**
PACER Laboratory **Department of Psychology**
[2015-2016] *Clinical Psychology*: Daniel Foti, Ph.D.

Research Focus: Examined neural activity through the psychophysiological techniques of EEGs and ERPs. The studies focused on the interaction of brain wave activity with the regulation of emotion, effects of social exclusion through Cyberball, monitoring various performances, and the processing of monetary and non-monetary rewards.

- https://sites.google.com/site/pacerlab/people

Responsibilities: Contributed largely to data collection, operating ERP and other programs, implementation of study protocols, correctly set up EEG and visual monitoring equipment, monitored various physiological signals in real-time, constant participant interaction, and correctly cleaned and stored EEG and visual equipment.

Research Assistant (Undergraduate) **Purdue University**
Carlston Social Cognition Laboratory **Department of Psychology**
[2014-2015] *Social Psychology*: Tim McCall, Ph.D.

Research Focus: Observed the interactions between social cognition, person perception, and how the actions specific group members make can affect impressions of non-implicated group members, resulting in contamination. Also investigated was the consequent effect on pro-social behaviors, stereotyping and prejudice, and perceptions of and voting for political candidates.

Responsibilities: Aided in hypothesis formation, data collection and analysis, implementation of study protocols, writing and creating personality vignettes, some work with Qualtrics to program tasks, some SPSS usage, some data management and coding, one-on-one experience with participants, and reporting of results.

PUBLICATIONS

Brown, N., **Petell, Jennifer A.**, Rajo, E.. (2022) Burn Injuries Associated with Body Area: A Longitudinal Examination. *[Manuscript in preparation].* Department of Psychology, Louisiana State University Health Sciences Center & Department of Psychology, University of Mississippi.

Petell, Jennifer A. Bilsky, Sarah A. (2022). Gastrointestinal Symptoms in Emetophobia. *[Manuscript in preparation].* Department of Psychology, University of Mississippi.

Petell, Jennifer A., Bierma, S. R. (2022) Self-injury in Emetophobia: A Mixed Methods Analysis. *[Manuscript in preparation].* Department of Psychology, Louisiana State University Health Sciences Center & Department of Psychology, University of Mississippi.

Petell, Jennifer A. & Maack, Danielle J. (2022). Emetophobia, NSSI, and suicidality: Results of an online representative sample. *[Manuscript in preparation]*. Department of Psychology, University of Mississippi.

Petell, Jennifer A., & Bilsky, Sarah A. (in press). An Examination of the Association between Emotion Regulation and Emetophobia Symptoms. *Psychological Reports.*

Patrick, G., Ferrie, M. L., **Petell, J. A.,** Hunter, L. R., Maieritsch, K. P., Franklin, C. L., & Raines, A. M. (in press). Psychometric Properties of the PCL-5 in Black Veterans. *Psychological Trauma: Theory, Research, Practice, and Policy.*

Petell, Jennifer A., Wickenhauser, Molly E., & Maack, Danielle J. (2022). Afraid to vomit? The relationship between temperamental fear, symptoms of emetophobia, and the impact of gender. *Graduate Student Journal of Psychology, 19,* 87-97. https://doi.org/10.52214/gsjp.v19i.10049

Bilsky, S. A., Olson, E. K., Luber, M. L., **Petell, J. A**., & Friedman, H. P. (2022). An initial examination of the associations between appearance related safety behaviors, socio-emotional, and body dysmorphia symptoms during adolescence. *Journal of Adolescence, 94* (7), 939-954. https://doi.org/10.1002/jad.12074

EDITORIAL ACTIVITIES

Ad Hoc Peer Reviewer *Psychological Reports*
[2020]

POSTER PRESENTATIONS

**denotes mentored undergraduate student presenter*

Patrick, G., Ferrie, M. L., **Petell, J. A.,** Hunter, L. R., Maieritsch, K. P., Franklin, C. L., & Raines, A. M. Psychometric Properties of the PCL-5 in Black Veterans. Poster presentation at: 69th Annual Meeting of the Southeastern Psychological Association, 2023 April 5-8th, New Orleans, LA. [Accepted]

Gilbert, A., **Petell, J. A.,** & Maack, D. J. Emetophobia and depressive symptoms: Could emotion regulation play a role? Poster presentation at: 55th Annual Convention of the Association for Behavioral and Cognitive Therapies, 2022 November 18-21st, New Orleans, LA.

Petell, J. A., & Maack, D. J. Suicidality, self-harm and emetophobia symptoms. Poster presentation at: 7th Annual UM Conference on Psychological Science; 2020 April 24; Oxford, MS. (Conference canceled)

*Burns, D., **Petell, J. A.,** & Maack, D. J. Emotion regulation and emetophobia symptoms. Poster presentation at: 7th Annual UM Conference on Psychological Science; 2020 April 24; Oxford, MS. (Conference canceled)

Tinsley, D., Sharpe, K., **Petell, J.**, Pruett, M. & Young, J. Integrating evidence-based psychological practice in a chronic pain treatment clinic: Preliminary results of an ongoing research project. Poster presentation at: 53rd Annual Convention of the Association for Behavioral and Cognitive Therapies, 2019 November 21-24th, Atlanta, GA.

*Abbott, K., **Petell, J. A.,** & Maack, D. J. Depressive symptoms and the freeze response. Poster presentation at: 6th Annual UM Conference on Psychological Science; 2019 April 12; Oxford, MS.

*Williams, K., **Petell, J. A.,** & Maack, D. J. Symptoms of health anxiety and disgust. Poster presentation at: 6th Annual UM Conference on Psychological Science; 2019 April 12; Oxford, MS.

Petell, J. A. & Maack, Danielle J. Symptoms of emetophobia and suicidality among pregnant women. Poster presentation at: 68th Annual Mississippi Psychological Association Convention; 2018 September 13; Biloxi, MS.

ORAL PRESENTATIONS

Petell, J. A. Emetophobia: Phenomenology, epidemiology, and clinical correlates. Talk presented at Psychology Seminar at Louisiana State University Health Sciences Center; 07 December 2022; New Orleans, LA.

Petell, J. A. Susanna Kaysen: Case conceptualization. Talk presented at Case Conferences at the University of Mississippi; 26 March 2021; University, MS.

Petell, J. A. & Hill, S. Emotion disturbances and psychosocial and behavioral needs of children through young adults [Audiovisual slides]. Course presenter at: CentralReach; 2020 April 30.

Maack, D. J., & **Petell, J. A.** A transdiagnostic understanding of emetophobic symptoms: a multimodal approach. In J. Tyler (Chair) symposium entitled Mechanisms and Meaningful Outcomes. Symposium presentation at: 53rd Annual Convention of the Association for Behavioral and Cognitive Therapies; 2019 November 21-24th; Atlanta, GA.

Petell, Jennifer A. *&* Maack, Danielle J. What's disgust got to do with it? Talk presented at Three Minute Thesis (3MT) Competition at University of Mississippi; 2019 October 22; Oxford, MS.

Petell, Jennifer A. & Maack, Danielle J. Is fear of vomit associated with suicidality in pregnancy? Data blitz presented at: 6th Annual UM Conference on Psychological Science; 2019 April 12; Oxford, MS.

Petell, J. A. & Maack, Danielle J. Emetophobic symptoms and the fight, flight, freeze response system. Data blitz presented at: 5th Annual UM Conference on Psychological Science; 2018 April 13; Oxford, MS.

Petell, J. A. *&* Maack, Danielle J. Emetophobia and disordered eating. Talk presented at Three Minute Thesis (3MT) Competition at University of Mississippi; 2017 October 26; Oxford, MS.

Maack, D. J. You can run but you can't hide (From your physiological symptoms): Approaching Interoceptive Exposure. Assistant to presenter at: 68th Annual Mississippi Psychological Association Convention; 2017 September 21; Biloxi, MS.

TEACHING EXPERIENCE

Instructor of Record — **Psychopathology: Integrative Approaches (PSY 311)**
[Spring 2021]

Graduate Teaching Assistant — **Personality Psychology (PSY 315)**
[Fall 2021] — *Kim Sallis, Ph.D.*

Graduate Teaching Assistant — **Integrative Approaches to Psychopathology (PSY 311)**
[Spring 2021] — *Carey Dowling, Ph.D.*

Graduate Teaching Assistant — **Abnormal Psychology (PSY 321)**
[Fall 2020] — *Danielle Maack, Ph.D.*

Graduate Teaching Assistant — **General Psychology (PSY 201)**
[Spring 2020] — *Mervin Matthew, Ph.D.*

Guest Lecturer — **Abnormal Psychology (PSY 321)**
[September 27, 2019] — *Danielle Maack, Ph.D.*

Guest Lecturer — **Industrial and Organizational Psychology (PSY 321)**
[September 27, 2019] — *Danielle Maack, Ph.D.*

Graduate Teaching Assistant — **General Psychology (PSY 201)**
[Fall 2019] — *Lavina Ho, M.S.*

Graduate Teaching Assistant — **Social Psychology (PSY 321)**
[Fall 2018, Spring 2019] — *Marilyn Mendolia, Ph.D.*

Graduate Teaching Assistant — **General Psychology (PSY 201)**
[Fall 2017] — *Todd Smitherman, Ph.D.*

SEMINARS & WORKSHOPS ATTENDED

Bierma, S. (2022, July) *SafeZone Training.* Training conducted Louisiana State University Health Sciences Center.

Callahan, K. (2022, July) *ADOS-2 Training*. Training conducted Louisiana State University Health Sciences Center.

Bilsky, S. (2021, August – December). *Anxiety, Traumatic Stress, and Related Disorders.* Seminar conducted at the University of Mississippi.

Dixon, L. (2020, August – December). *Dialectical Behavior Therapy.* Seminar conducted at the University of Mississippi.

Johnson, L. R. (2020, January – May). *Advanced Multicultural Psychology*. Seminar conducted at the University of Mississippi.

Maheu, M. (2020, March). *Telepsychology Best Practices: Four-Part Series*. Webinar conducted by the American Psychological Association.

Hoffman, S. & Hayes, S. (2019, November). *Functional Analysis in Process-Based CBT.* Workshop conducted at the 53rd Annual ABCT Convention, Atlanta, GA.

Young, J. (2018, August- December). *Evidence-Based Clinical Intervention*. Seminar conducted at the University of Mississippi.

Maack, D. J. (2017, September). *Approaching Interoceptive Exposure*. Workshop conducted at the 68th Annual Mississippi Psychological Association Convention, Biloxi, MS.

PROFESSIONAL ACTIVITIES & SERVICE

Assistant to Clinical Director — **University of Mississippi**
[2021-2022] — Supervisor: Kristin Austin, Ph.D.

Peer Mentorship, Diversity Committee — **University of Mississippi**
[2021-2022] — Senior Clinical Student Member

Conference on Psychological Science — **University of Mississippi**
7th Annual, April 1, 2022 — Clinical Graduate Poster Judge

Graduate Student Advisory Committee — **University of Mississippi**
[2020-2021] — Senior Clinical Student Member

AFFILIATIONS & ORGANIZATIONS

Clinical & Counseling Graduate Students for Diversity, Equity, & Inclusion — **USA**
[2020 - 2022] — Student Member

Association of Behavioral and Cognitive Therapies (ABCT) — **University of Mississippi**
[2018-2019] — Student Member

Mississippi Psychological Association (MPA) — **University of Mississippi**
[2018- 2019] — Student member

VOLUNTEER EXPERIENCE

Peer Mentorship, Diversity Committee — **University of Mississippi**
[2021-2022] — Senior Clinical Student Member

Semmes Murphey Clinic — **Memphis, Tennessee**
[August 2021] — Graduate Student Neuropsychology Volunteer

Panola Behavioral Hospital — **Batesville, Mississippi**
[September 2019 - March 2019] — Graduate Student Volunteer
[March 2021 - June 2021]

Graduate Student Advisory Committee — **University of Mississippi**
[2020-2021] — Senior Clinical Student Member

Southeastern Women's Studies Association (SEWSA) **University of Mississippi**
[March 2019] Graduate Student Ambassador/Volunteer

HONORS & AWARDS

Psychology Department Travel Award **University of Mississippi**
November 2021 Pre-doctoral Internship

Psychology Department Travel Award **University of Mississippi**
November 2019 ABCT 53rd Annual Convention

Cum Laude **Purdue University**
May 2016

Semester Honors **Purdue University**
Fall 2012, Spring 2013, Fall 2013, Spring 2014, Spring 2015, Fall 2015, Spring 2016

Dean's List **Purdue University**
Fall 2012, Spring 2013, Fall 2013, Fall 2014, Spring 2014, Spring 2015, Fall 2015, Spring 2016