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The Application of Emotional Processing Theory to the Healing Mechanisms of Naturalistic Psychedelic Use for Survivors of Sexual Assault

by

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Presented to the Graduate and Research Committee

of Lehigh University

in Candidacy for the Degree of

Doctor of Philosophy

in

Counseling Psychology

Lehigh University

December 5, 2025

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August 2026

Approved and recommended for acceptance as a dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy/Education.

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Acknowledgments

I would like to express my deep gratitude to the many people who supported me throughout my doctoral training and the completion of this dissertation. First, I want to thank my advisor, Dr. Johnson, who has a feminist-mentorship superpower. I have never felt as seen, heard, and genuinely empowered in an academic space as I have under your guidance. You have and will continue to shape the field of feminist psychology. Drs. Liang, Fu, and Fink, I am beyond grateful for your valuable feedback and dedication as members of my committee. To Marsha, thank you for making this journey not only manageable, but genuinely joyful. Your friendship made even the most difficult moments feel lighter, and I cannot imagine this experience without you. I also want to acknowledge Maya, my partner during much of this journey. I continue to hold deep appreciation for the support and presence you offered during this time. I would like to honor my grandmother, through whom I carry my Indigenous ancestry, which makes this work especially meaningful. And finally, to my mom—there are no words that fully capture what you have been to me. Thank you for being my constant sounding board, my steady source of encouragement, and the person who never let me lose sight of what I am capable of. Not many people can say they pursued a doctorate with their mother, and it has been incredibly meaningful to share this journey with you. You instilled in me the value of education, perseverance, and striving toward something greater, and this achievement is as much yours as it is mine.

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Abstract

This study explored the application of emotional processing theory (EPT), the leading model for evidenced-based trauma treatment, to the therapeutic potential of naturalistic classic psychedelic use specifically for individuals who have survived an experience of sexual assault. EPT suggests that trauma recovery is facilitated through fear activation, the incorporation of new information, and behavioral change/modification. The healing potential of psychedelics has recently been investigated using the General Change Mechanism Theory (GCM), which incorporates components consistent with EPT (i.e., problem actuation [fear activation], resource activation, clarification, mastery [incorporation of new information], and symptom reduction [behavior change/modification]). Using structural equation modeling (SEM), results supported the hypothesized EPT-informed model, over an alternative model indicating that greater fear activation was associated with higher incorporation of new information, which in turn related to lower trauma-related psychopathology. These associations remained significant when accounting for time since trauma and trauma severity. Findings suggest that naturalistic psychedelic experiences may engage therapeutic processes central to emotional processing, aligning with mechanisms observed in empirically supported trauma treatments. While causality cannot be inferred, this study provides preliminary empirical support for applying the principles of EPT to understanding therapeutic processes that may occur within naturalistic psychedelic experiences among survivors of sexual assault.

Chapter I

Introduction

Survivors of sexual assault have greater rates of psychological disorders, including post-traumatic stress disorder (PTSD), anxiety, depression, bipolar, disordered eating, obsessive compulsive disorder, and substance misuse than people who have never been sexually assaulted (Dworkin, 2020). Moreover, survivors of sexual assault tend to experience more severe trauma-related psychopathology than survivors of other types of traumas (Dworkin, 2020; Steenkamp et al., 2012). An array of empirically supported treatments for survivors of sexual assault exists primarily based in the emotional processing theory (EPT) including cognitive processing therapy (CPT), eye movement desensitization and reprocessing (EMDR), narrative exposure therapy (NET), and prolonged exposure therapy ([PE] Miles et al., 2023). Although these treatments demonstrate short-term and long-term efficacy for many sexual assault survivors (e.g., Shapiro, 1987; 1989; Parcesepe et al., 2014; Laliotis et al., 2021; Miles et al., 2023) they are not effective, or accessible for all clients, and thus, the mental health field has taken interest in alternative options of healing, including the potential therapeutic benefits of psychedelic plant medicine.

It is crucial to continue validating and researching alternative trauma interventions, even though established interventions (e.g., PE, CPT) have demonstrated utility for many individuals with PTSD, including survivors of sexual assault (Nishith et al., 2002). One reason exploring alternative trauma interventions is necessary is the reality of response variability to current treatments (Stein et al., 2012). For example, individuals with complex trauma (e.g., repeated childhood sexual abuse) may need more intensive treatment than those who have experienced a single abuse (e.g., a car accident), survivors' readiness to receive treatment may vary, or survivors may have varying degrees of resilience or social support and may respond differently

to interventions. It's possible that exploring and understanding new and alternative treatments including naturalistic psychedelics use can also enhance accessibility, focus on specific symptoms (e.g., depression, anxiety), and meet a range of individual, cultural, and comorbid needs, which may ultimately result in more effective and inclusive care. Yet, few studies exist examining psychedelics as an aid in supporting those who have experienced sexual assault-related trauma (Bousou et al., 2008). Considering the disproportionate negative outcomes withstood by individuals who have been sexually assaulted outlined above, examining the healing potential and mechanisms of change from psychedelics with this population is needed. To fill the gap in the literature, the current study aimed to explore the application of EPT, the most evidence-based model of trauma treatment, to therapeutic psychedelic use among survivors of sexual assault.

Psychedelics

Psychedelics, which are compounds that bind to the serotonin receptor of the brain and alter one's consciousness, can facilitate healing for various psychological maladies (e.g., Carhart-Harris & Nutt, 2017; Curtis et al., 2020). The broader category of psychedelics includes substances that may act on a number of different receptors or through different actions on serotonergic (or other) systems. For several decades, discussion of integrating psychedelics into contemporary mental health treatment was silenced because of the United States government's criminalization of psychedelic plant medicines (Renshaw, 2020). Over the last decade, however, the Federal Drug Administration (FDA) in the United States authorized several studies aimed at investigating the effects of fusing modern psychotherapy with traditional medicinal plants as an intervention for a range of mental health conditions. Some state legislatures, such as those in Oregon, Colorado (Marks, 2023), and California (Salazar, 2022), are making state-specific

determinations on the matter and instating reform bills that legalize the use of psychedelics (e.g., psilocybin) for therapeutic purposes. Currently in its final stage of the approval procedure, the FDA is anticipated to make nation-wide recommendations, at any moment, for the use of psychedelics in mental health clinical settings (Doblin et al., 2019; Knutsen, 2024).

Several studies highlighted the clinically significant effects of psychedelics on symptoms associated with service- and work-related trauma (e.g., military personnel and first responders; Barone et al., 2019; Davis et al., 2020; Mitchell et al., 2021; Mithoefer et al., 2011; Mithoefer et al., 2013; Mithoefer et al., 2019; Oehen et al., 2013; Ot'alora et al., 2018). There is less research exploring the effects of psychedelics on sexual assault-related trauma. However, a recent study demonstrated preliminary evidence of the healing effects of psychedelics among a sample of survivors of sexual assault (Tschauner & Johnson, under review). Further, across forms of trauma, a dearth in the literature exists regarding what variables explain the healing properties of psychedelics. Identifying the variables that explain the potential decrease in trauma-related psychopathology is critical for those interested (i.e., survivors, clinicians) in utilizing psychedelic plant medicine in an optimal way. More specifically, little is known about how the use of psychedelics might elicit emotional processing and subsequently impact trauma-related psychopathology in individuals who have survived an experience of sexual violence.

The underlying neurological processes that underpin the transformative effects of psychedelics require careful examination. Researchers in neuropharmacology, cognitive neuroscience, and psychiatry have extensively studied how these substances influence brain systems. Classic psychedelics, including LSD, psilocybin, and DMT (the active compound in ayahuasca), primarily exert their effects through activation of serotonin 5-HT_{2A} and, to a lesser extent, 5-HT_{2C} receptors (Nichols, 2004; Reiff et al., 2020). Non-classic psychedelics such as

MDMA and ketamine interact with brain chemistry through distinct mechanisms. MDMA primarily enhances serotonin release on a global scale, while ketamine acts predominantly as an NMDA-type glutamate receptor antagonist, though it also has other neurochemical effects (Nichols, 2004). Classic psychedelics moderate the brain's default mode network's activity to temporarily lower its connectivity and activity (Ly et al., 2018). The disruption of functional connectivity in the default mode network also underlies what is termed "ego dissolution" or disruption of an integrated sense of self and identity. The current study focused solely on classic psychedelic use given the complexity of non-classic psychedelics (e.g., MDMA, ketamine) and further the potential difference in therapeutic impact and value. Limiting the focus to classic psychedelics (i.e., psilocybin, LSD, DMT) allows for clearer examination of their specific therapeutic effects and mechanisms which may differ entirely from non-classic psychedelics.

Neuroimaging research has demonstrated that perception, emotion, social relatedness, and cognition are affected by this interaction (Reiff et al., 2020). Results of neuroimaging evidence that the brain's default mode network interacts with cognitive processes such as memory (Posterior Cingulate Cortex), self-awareness (Posterior Cingulate Cortex), emotional regulation (Media Prefrontal Cortex), moral reasoning (Inferior Parietal Lobule), and perspective taking (Inferior Parietal Lobule; Carhart-Harris et al., 2014). This interaction explains why such transformative effects occur when undergoing psychedelic use in both clinical and naturalistic settings.

The current study focused on naturalistic, classic psychedelic (e.g., psilocybin, LSD, DMT, and mescaline) use meaning non-clinical settings in which the user self-administers the substance without the oversight of a clinician or researcher. These settings may include a variety of contexts such as traditional ceremonies, outdoors, with a group of people, or in solitude.

Studying naturalistic contexts of psychedelics allows researchers to investigate larger, culturally, and socially rooted uses of psychedelics, providing critical context that clinical studies may overlook while also revealing insights that are highly applicable to real-world applications. Examining naturalistic psychedelic use allows us to understand the healing mechanisms of psychedelics outside of the traditionally Western psychotherapy context. The aim is to honor that psychedelics origins stem from naturalistic settings.

Incorporating Indigenous Wisdom with Western Practice

Although the healing properties of psychedelics is a relatively new conversation in Western medicine, this wisdom has a long history in Indigenous practices. The resurgence of interest in integrating psychedelics into contemporary therapeutic practice sparked a discussion concerning how traditional Indigenous wisdom could inform and complement Western treatment modalities, as well as the importance of paying respect to the wisdom's original source (Celidwen et al., 2023; Quasti & Sisti, 2025). Clear ethical principles for paying this respect have been developed by Indigenous writers themselves. These include (1) reverence (honoring the value and dignity of individuals and their experiences); (2) respect (recognizing individual autonomy, rights, and personal boundaries); (3) responsibility (ensuring accountability of one's actions and impacts); (4) relevance (ensuring the needs and context of the individuals involved); (5) regulation (prioritizing guidelines and standards); (6) reparation and belonging (addressing past harm and fostering a sense of inclusion and community); (7) restoration (working towards healing and recovery from harm); and (8) reconciliation (promoting harmony and mutual respect; Celidwen et al., 2023). It is crucial to prioritize Indigenous voices and follow these recommendations at the forefront of psychological research and practice.

The context of Indigenous people's understanding of the medicinal properties of these plants should be taken into consideration while analyzing study findings and will remain at the forefront of the current researcher's mind throughout the current study. It is important for researchers, users, and practitioners to comprehend the historical significance of these plant medicines as well as the ramifications of incorporating them into therapeutic practices. Consequently, the principles, as outlined by Celidwen and colleagues (2023), must be considered in the process of integrating psychedelic plant medicine into therapeutic practice and research.

Theoretical Framework

To date, the general mechanisms of change theory has been used to conceptualize how psychedelics may impact psychological distress (Wolff et al., 2024). However, emotional processing theory (EPT) has been the guiding framework used in developing trauma interventions known to support recovery from an array of traumatic experiences, particularly sexual assault-related trauma (e.g., CPT, PE, EMDR). Therefore, consistent with empirically supported trauma interventions the current study aimed to explore psychedelics' impact on sexual trauma-related psychopathology through EPT.

General Mechanism of Change Theory and Psychedelic Outcomes

Research on therapeutic outcomes frequently addresses the central query of what factors contributes to change in individuals. The theory behind general change mechanisms (GCMs) posits that the "common factors"—shared underlying principles among various therapeutic interventions—are what explains treatment efficacy. It is believed that these variables influence therapeutic change in a variety of approaches, independent of the particular strategies used (Frank, 1961; Grawe, 1997; Wampold & Imel, 2015; Cuijpers et al., 2019).

Grawe (1997) identified five GCMs based on a large body of empirical data, which included controlled therapy trials and naturalistic studies that looked at the connection between therapeutic procedures and results. Problem actuation, resource activation, clarification, mastery, and therapeutic interaction are the five GCMs noted by Grawe (1997, 2004). These mechanisms are fundamental components that can be triggered in any therapeutic setting, increasing the intervention's efficacy. The GCMs have been used to explain the healing potential of psychedelics (Wolff et al., 2024).

Problem Actuation

Problem actuation, as defined by the GCM theory, is the process of activating or bringing a person's underlying difficulties or problems to the forefront (Wolff et al., 2024). The individual confronts and addresses the underlying emotional, cognitive, or behavioral habits that contribute to their challenges. This actuation is critical for change because it clarifies and presents the problem, allowing the individual to work through it using new tactics or insights that lead to long-term transformation. By stimulating the brain's serotonergic system, psychedelics have been reported to foster an emotional openness that makes it possible for people to revisit and digest traumatic events (e.g., activate one’s fear or fear-related memories) with less avoidance and more reflection (Andersen et al., 2021).

Resource Activation

Theorists propose that problem actuation alone is not therapeutic; rather, problem actuation is only helpful when combined with sufficient levels of resource activation (Gassmann & Grawe, 2006). To drive behavioral modification and therapeutic change, resource activation in psychotherapy entails utilizing an individual’s beliefs, ideas, and protective factors to activate their approach-motivational system as opposed to avoidance-motivational system. When the

approach-motivational system is activated, they can engage in alternative thinking and move towards values-based behaviors and personal growth (Flückiger et al., 2010b; Grawe, 1997, 2004). Research suggests that psychedelic experiences may have the ability to activate resources through psychedelic-induced peak experiences, which are profound moments of euphoria and/or insight, leading to positive appraisals of the world and oneself (Kähönen, 2023). In a similar vein, some psychedelic-induced discoveries, such as those pertaining to optimistic perspectives on life and oneself or optimistic aspirations or values, may qualify as resource-activating experiences.

Clarification and Mastery

Two important therapeutic processes—mastery and clarification—are thought to be fueled by the interaction of problem actuation and resource activation (Grawe, 1997, 2004; Grosse Holtforth and Flückiger, 2012). Clarification entails realizing and comprehending previously concealed motivations influencing one's ideas and actions (Grawe, 1997). Mastery is referred to as gaining control over circumstances that previously seemed overpowering. This includes controlling challenging exterior events as well as powerful internal experiences, such negative feelings or thoughts (Grawe, 1997). The emotional breakthrough experience, or the experience of catharsis/emotional release after confronting and conquering challenging emotional states while under the influence of psychedelics, is a related construct to clarification and mastery, which is frequently highlighted in psychedelic research (Roseman et al., 2019).

The GCMs are proposed as separate, but related constructs linked to the general healing mechanisms of psychedelics across various populations (Wolff et al., 2024). However, for some groups, such as survivors of sexual assault, the trauma-related psychopathology may present the possible need for a more specialized recovery approach. Survivors of sexual assault frequently

experience a unique set of trauma-related outcomes and subsequently unique healing mechanisms (Steenkamp et al., 2012; Mason & Lodrick, 2013; Dworkin, 2020).

Subsequent Outcomes of Sexual Assault

Sexual assault survivors report subsequent negative outcomes at higher rates than those who have never experienced a sexual assault (Dworkin, 2020; Mason & Lodrick, 2013). Survivors of sexual assault are more likely to experience revictimization (Stockdale et al., 2014), low relationship satisfaction (DiMauro & Renshaw, 2019), self-blaming beliefs (Kline et al., 2018), and substance and alcohol dependence (Ullman et al., 2013; Ullman & Peter-Hagene, 2014). Alarmingly, survivors of sexual assault report higher rates of severity in trauma-related psychopathology than those who have survived a non-sexual assault traumatic event (e.g., combat, natural disaster; Dworkin, 2020; Steenkamp et al., 2012). It is known that interpersonal violence/assaultive violence, sexual assault, and rape are more likely to result in PTSD symptoms then many other index traumatic events (Breslau, 2001). These detrimental, and unique impacts of sexual assault on survivors' mental health implicates the necessity for research into efficacious interventions—in both naturalistic and clinical settings.

Integrating Psychedelics in Sexual Assault Related Trauma Interventions

Rape culture is a term used to describe an environment made up of social attitudes and behaviors that normalize, diminish, and even encourage sexual violence, including traditional gender norms, sexism, hostility toward women, antagonistic sexual ideas, and condoning violence (Burt, 1980; Johnson & Johnson, 2021; Lonsway & Fitzgerald, 1995). Feminist viewpoints on rape culture specifically mark that sexual assault is perpetuated through ideologies such as power and control (Whisnant, 2021). These ideologies frequently take the form of the belief that people should value their independence over their interdependence, which encourages

a lack of respect and connection in interpersonal relationships (Angelou, 2008; Whisnant, 2021). By emphasizing independence over interdependence, these ideologies foster a sense of entitlement and individualism that undermines consent, respect, and empathy in relationships and normalizes sexual violence (Whisnant, 2021).

Rape, as a tool of control, has existed across various cultures and predates European colonialism (Vernon, 2022). However, the concept of rape culture in its current form is deeply tied to the attitudes and systems established during European colonial rule, long after the discovery of plant medicine (Dunbar-Ortiz, 2023). Avenues to recover from sexual violence and challenge the destructive elements of rape culture can be taken through naturalistic psychedelic intervention (Goldpaugh, 2021). The dehumanizing experience and negative outcomes of sexual assault may be ameliorated through utilizing an intervention that such as psychedelics. Further, psychedelics can help process traumatic memories, release feelings of shame and self-blame, and promote emotional healing in a way that conventional therapies sometimes cannot. Survivors of sexual assault may engage in recovery, develop forgiveness, and experience healing through the use of psychedelics (Goldpaugh, 2021). Although there is a plethora of reasons why psychedelics may be particularly healing for survivors of sexual assault, limited research has explored this proposed relationship and no research to date has explored the potential mechanisms that may explain this healing.

Emotional Processing Theory

Foa and Kozak's (1986) emotional processing theory (EPT) has influenced how anxiety disorders, such as posttraumatic stress disorder (PTSD), are conceptualized and how successful trauma interventions are created. Derived from Lang's (1977) model of bioinformational processing, EPT asserts that "approaching, accepting, symbolizing, tolerating, regulating,

making meaning, and utilizing or transforming emotions" facilitates psychological change (Warwar & Greenberg, 2023, p. 743). The bioinformational model argues that emotions are represented in the brain's memory structure as *action tendencies*, which refer to the dispositions or behavioral habits that are activated by stimuli (Lang, 1977, 1979). These action tendencies include (1) fear activation: information about the feared stimulus situation, (2) incorporation of new information: interpretive information about the meaning of the stimulus and response elements of the fear structure, and (3) modification: information about verbal, physiological, and overt behavioral responses.

According to the application of EPT to PTSD specifically, the onset and maintenance of trauma-related psychopathology in survivors of trauma is upheld by a fear being represented in the memory structure of the brain, known as a *fear structure* (Foa et al., 1995; Foa & Rothbaum, 1998). Foa and Kozak (1986) posited that modifying the problematic components (e.g., exaggerated or inaccurate associations between stimuli and danger, excessive responses to perceived threats, maladaptive beliefs about one's ability to cope with fear) of the fear structure is necessary for an effective trauma intervention. For modification of the fear structure to occur, two things must happen: (1) the fear and anxiety need to be triggered or activated and (2) the unrealistic information about the fear needs to be replaced with realistic information. This modification then leads to behavioral change (Foa & Kozak, 1986).

Fear Activation

The technique of purposefully triggering a person's fear reaction during therapeutic procedures, including exposure therapy, is known as fear activation (Foa et al., 2016). In order to activate fear, one must gain access to the brain's fear structure, which is a network of behavioral, emotional, and cognitive cues connected to the fear response. This framework may contain

information on the person's beliefs or interpretations, response components (e.g., elevated heart rate, perspiration, avoidance), and specifics about what the person perceives as threatening (e.g., place, object, person; Foa et al., 2016). Further, it is believed that the neurological mechanisms of psychedelics activate fear structures (Wolff et al., 2020). Consensus among trauma-related interventions aimed at reducing trauma-related psychopathology, particularly in survivors of sexual assault, is that for individuals to experience relief, they must first activate the exact experience causing discomfort (Frank, 1961; Grawe, 1997). Additionally, plasticity in the amygdala and prefrontal areas of the brain are related to fear/extinction learning (Mahren & Holmes, 2016). Activation of these areas and new learning during exposure is thought, in part, to underlie the reduction of fear and modification of fear memories (Mahren & Holmes, 2016). Further, fear activation may map on to the GCM construct of problem actuation.

New Information

The 'incorporating new information' phase, according to Foa and colleagues (2016), is an essential step in the therapeutic process where the individual learns to update or change their current fear structure by incorporating new, corrective information. This is a crucial stage in changing maladaptive emotional reactions that are brought on by specific memories or events, like excessive dread or anxiety. It is important to update and challenge beliefs, be receptive to corrected information, and disprove experiences while adopting new knowledge according to EPT. The theory proposes that the person becomes accustomed to the feared stimuli as a result of processing and assimilating new information; this results in a decrease in the person's emotional and physical responses to the stimuli, leading to behavioral change and modification. The linear component of new information as an outgrowth of fear activation in EPT may map onto the

constructs of resource activation, clarification, and mastery from the GCM paradigm (Wolff et al., 2024).

Modification. The final stage, modification of behavior, describes how successfully processing and modifying the fear structure can lead to a change in maladaptive actions that are motivated by the fear structure, such as avoidance or safety behaviors (Foa et al., 2016). This phase is crucial for converting emotional and cognitive shifts into useful, functional gains in the person's everyday life. This modification may include a reduction in psychopathological symptoms including PTSD, depression, and anxiety, as well as an increase in adaptive behaviors, and is perceived to result in long-term therapeutic impact through improved functioning and quality of life (Foa et al., 2016).

Psychedelics and Emotional Processing Theory

The fundamental idea behind modifying the fear structure in EPT is that an emotion network is made up of connected representations of stimuli and responses related to emotions and meanings that are attached to these stimuli and responses (Foa & Kozak, 1986, 1998). For example, when a survivor sees someone similar in appearance and age as their perpetrator, feeling dread and trying to flee can be reasonable reactions. The fear network is then activated which causes behavioral, physiological, and cognitive responses like avoidance or flight. The fear network's nodes may be robust, over-inclusive (i.e., benign stimuli are linked to threat) and have a low activation threshold after a trauma. Consequently, the fear response is easily elicited, even in situations where it is not necessary, creating a sense of extreme danger in the environment (Foa et al., 1989). The long-term negative outcomes of a fear network that has not been modified through effective intervention includes trauma-related psychopathology such as depression, anxiety, heightened stress, and PTSD (Price et al., 2019).

Frequently reported outcomes of the psychedelic mechanisms of change follow the principles of EPT in several ways. First, the significance of enabling repressed or suppressed emotions to come to the surface (EPT: fear activation; GMC: problem actuation) and gaining insight (EPT: incorporation of new information; GMC: resource activation, clarification, mastery) is emphasized by both the healing mechanisms of psychedelic use and EPT (Alpert et al., 2021). The altered state of consciousness brought on by psychedelic substances can facilitate the reexperiencing and processing of painful experiences, similar to exposure techniques backed by EPT (Weiss et al., 2023; Alpert et al., 2021). This is the first step in the EPT model, known as fear activation. Specifically, by lowering psychological barriers and inducing an altered state of consciousness, psychedelics can help people access and address emotions and memories that may be difficult to access otherwise. Therefore, psychedelics may act as a facilitator to fear activation.

Additionally, people in this altered state under psychedelics may be more reflective, open, and willing to examine upsetting events without avoiding them or reacting to them with typical fear or avoidance behaviors (Orlowski et al., 2021). This mirrors the second step in the EPT model, incorporating new information. Psychedelics users have reported that psychedelics provide opportunities to explore and comprehend their emotions thoroughly, which can lead to increased emotional insight and integration (e.g., Barrett et al., 2020; Dolder et al., 2016; Roseman et al., 2018; Stroud et al., 2017; Wagner et al., 2017). This outcome may assist people in breaking down rigid emotions and developing healthier methods to deal with complex emotions. It can promote emotional healing and personal growth by teaching people how to recognize and process their emotions more effectively.

Research has also demonstrated that psychedelics facilitate meaning making (Griffiths et al., 2008), which ultimately promotes healing and is consistent with EPT. Foa and Kozak (1986) broadened the definition of meaning when they expanded EPT to encompass information about stimuli, responses, and the relationships between them that are both semantic (meaningful) and non-semantic (non-meaningful; Foa & Kozak, 1998). By providing context for one's experiences—connecting experiences to core beliefs, integrating new insights, reframing interpretations, understanding the bigger picture—meaning making is possible (Foa et al., 2006; Nutt et al., 2023).

Meaning making occurs through various mechanisms via psychedelics. Psychedelics may allow existing connections to be more strongly active in some places and weaker in others. This is generally thought to occur through global changes in network activity (Nutt et al., 2023; Barksdale et al., 2024). Because of this, users are more likely to connect their thoughts, feelings, and past experiences in new ways, facilitating new insights and emotional understandings. Additionally, through psychedelics' impact on the default brain network, people report being able to view their feelings less defensively (Carhartt-Hariss & Friston, 2019; Nichols, 2016). With the typical obstacles of fear, judgment, or avoidance removed via psychedelics, it may be simpler to face and deal with challenging emotions, which may result in increased change and healing.

Change and healing are captured in the final component of EPT, modification (Foa et al., 2016). Modification is characterized by behavioral changes, change in physiological symptoms, and reductions in trauma-related psychopathology. This component entails a transformative process in which individuals undergo changes in how they perceive and respond to trauma. Behaviorally, change results in the adoption of healthy coping methods and adaptive reactions,

which replace dysfunctional patterns formed by trauma. The modification stage is marked by a reduction in trauma-related psychopathology which alleviates symptoms such as depression, anxiety, stress, and PTSD. Similarly, psychedelics have been shown to enhance emotional breakthroughs (Roseman et al., 2019) and neuroplasticity (Ly et al., 2018), which may accelerate the decrease of trauma-related psychopathology by facilitating emotional processing. Specifically, psychedelics may facilitate safety learning, rescripting of traumatic narratives, and meaning-making processes that disrupt and overwrite maladaptive memory patterns. Figure 2 shows how psychedelics can map onto this process through a model of integrating EPT with psychedelics as measured through the GCM framework (problem actuation, resource activation, clarification, and mastery).

Additional Critical Factors

Time. It is generally acknowledged by trauma researchers that time naturally lessens the intensity of symptoms, which reflects a progressive reduction in trauma-related psychopathology for many people, including survivors of trauma-related sexual violence (e.g., Frazier et al., 2004). Given the lack of ability to control for *when* survivors experienced sexual violence, time since sexual trauma will be incorporated as a covariate to remove its likely impact on trauma-related psychopathology. By controlling for the impact of time on both the latent and observable constructs within the current study, we can increase the likelihood that any relationships established between the constructs of interest are not confounded by the passage of time or changes in symptoms due to time.

Severity. The severity of sexual assault refers to a multitude of components related to the extent (e.g., type of contact, number of incidents) or intensity of the assault (Koss et al., 2024). Sexual assault severity is known to be a contribute to the intensity of trauma-related

psychopathology, with more severe assaults (e.g., forcible rape) often leading to greater symptom intensity, thereby acting as a potential confounding variable in the examination of these symptoms (e.g., Koss et al., 2024). Similar to time, it is impossible to directly control for the range of severity of sexual assault survivors have experienced; therefore, severity of the sexual assault will be added as a covariate to remove its likely impact on trauma-related psychopathology. By making this adjustment, the confounding effect of sexual assault severity on the constructs of interest will be lessened, allowing evaluation into the distinct contributions of the factors of interest.

By grounding the current study in EPT, we can better understand how survivors of sexual assault might benefit from psychedelic use and its potential mechanisms for fear activation, incorporating new information, and modifying behaviors (e.g., impacting trauma-related psychopathology). Typical approaches and interventions may not adequately address the complex nature of trauma-related psychopathology in this population. Exploring the impact of novel, alternative approaches such as naturalistic psychedelic use has the potential to improve healing results, reduce long-term psychological distress, and ultimately improve the quality of life for sexual assault survivors.

The Current Study

Although, as highlighted above, outcomes of psychedelic use appear to easily map onto EPT (see Figure 1), the leading model for evidenced-based trauma treatment (Alpert et al., 2023), no research to date has applied EPT to understand the mechanisms of healing from naturalistic psychedelic use. Therefore, the current study aimed to expand our knowledge of how naturalistic psychedelic use may support survivors of sexual assault healing from trauma-related psychopathology by answering the following research question:

(1) Does EPT apply to the healing process of naturalistic psychedelic use among survivors of sexual violence?

The present study utilized structural equation modeling (SEM) to test and estimate the application of EPT in a population of individuals who have survived an experience of sexual assault and have subsequently used psychedelics in a naturalist setting. The proposed model, in line with EPT, posits that psychedelic use stimulates a linear process, resulting in the reduction of trauma-related psychopathology. The following hypotheses, based on Foa and Kozak's (1986) theorizing regarding the utility of emotional processing for the treatment of trauma, were examined (see Figure 2 for a simplified conceptual diagram of this main model's variables):

Hypothesis 1a: Higher fear activation (problem actuation) will be associated with increased incorporation of new information (resource activation, clarification, and mastery).

Hypothesis 1b: Higher incorporation of new information will be associated with behavior modification as measured through less reported trauma-related psychopathology (depression, anxiety, stress, and PTSD).

In line with SEM best practices, an alternative model was examined. Supported by general mechanism of change theory (Grawe, 1997; Wolff et al., 2024), this alternative model posits that problem actuation, clarification, resource activation, and mastery all independently relate to a reduction in trauma-related psychopathology (i.e., depression, anxiety, stress, PTSD). For the alternative model, the following hypotheses were examined (see Figure 3 for a simplified conceptual diagram of this alternative model's variables):

Hypothesis 2a: Greater self-reported problem actuation will be associated with lower trauma-related psychopathology.

Hypothesis 2b: Greater self-reported clarification will be associated with lower trauma-related psychopathology.

Hypothesis 2c: Greater self-reported resource activation will be associated with lower trauma-related psychopathology.

Hypothesis 2d: Greater self-reported mastery will be associated with lower trauma-related psychopathology.

Hypothesis 2e: Problem actuation, clarification, resource activation, and mastery will covary.

Given the potential impact of time since trauma and severity of trauma on trauma-related psychopathology, time since sexual assault and severity of sexual assault variables were added as covariates for both the hypothesized and alternative models.

Chapter II

This chapter begins with a review of psychedelics including their historical underpinnings, therapeutic outcomes, and neurological mechanisms. Sexual assault-related trauma is then discussed, and the existing evidenced-based interventions for sexual-assault related trauma are synthesized. Finally, emotional processing theory (EPT) is outlined. An analysis of the parallels between therapeutic components of psychedelics and EPT are next outlined. Following this, the limited existent literature connecting psychedelics with sexual assault-related psychopathology is reviewed.

Psychedelics

A variety of substances with unique scientific names, such as psilocybin (mushrooms), LSD (lysergic acid diethylamide–acid), ayahuasca (harmala monoamine oxidase inhibitor alkaloids), N, N-Dimethyltryptamine (DMT), and mescaline/peyote (lophophora williamsii), are collectively referred to as psychedelics or psychotropic drugs (Reiff et al., 2020). Consumer reports of psychedelic effects indicate that they have the potential to change consciousness through mind-altering effects (Carhart-Harris & Nutt, 2017; Pollan, 2018). Individuals who have experienced the effects of psychedelics often describe the following outcomes: lowering of their defenses, connecting with the metaphysical world, and discovering a new sense of significance after using psychedelics (Andersen et al., 2021). Due to their cultural holiness and potential to affect a person's perception, emotion, consciousness, cognition, or conduct, psychedelics are frequently considered to be entheogenic, meaning they have the potential for facilitating an internal, spiritual experience (Winkelman, 2021).

General Overview of the History

Ancient History

There is evidence that ancient cultures used naturally occurring chemicals like psilocybin mushrooms, peyote, and ayahuasca in religious and healing rituals, suggesting that psychedelics have been used for healing and spiritual purposes for thousands of years (Schultes et al., 2001). These plant-based psychedelics continue to be used by Indigenous societies in Mesoamerica, the Amazon, and North America to treat mental and physical illnesses, enable spiritual journeys, and establish connections with deities (Renshaw, 2020). These rituals, which are frequently led by shamans or healers who assisted people in going through life-changing experiences, are essential to their cultural and spiritual traditions.

1900 – 1960

Psychedelics made their way into Western scientific inquiry at the beginning of the 20th century (Renshaw, 2020). Albert Hofmann, a Swiss scientist, created lysergic acid diethylamide (LSD) in 1938 (Hoffman, 1980; Renshaw, 2020). He subsequently discovered that LSD had significant effects on the brain (Hoffman, 1980). LSD, psilocybin, and other psychedelics began being researched for possible medical uses by the 1950s (Renshaw, 2020). Researchers and psychiatrists investigated their application in the treatment of a range of mental health issues, such as addiction, anxiety, and depression (Renshaw, 2020). At the time, research on psychedelics indicated that they might be revolutionary in the treatment of alcoholism, PTSD, and existential suffering in patients who were near death (Pollan, 2018)

1960 – 1970

The 1960s brought with it a surge in interest in psychedelics as well as controversy. Prominent individuals such as Timothy Leary and Richard Alpert, two Harvard professors and advocates for the use of psychedelics, contributed to the popularization of LSD and other psychedelics by endorsing its use for spiritual and personal development (Renshaw, 2020).

However, there was also a backlash because of their extensive use outside of supervised therapy settings and rising worries about their safety (Pollan, 2018; Renshaw, 2020). Psychedelics were linked to the counterculture movement, a social movement among the United States in the 1960s and early 1970s that rejected dominant cultural norms, values, and institutions of the time (Renshaw, 2020). By the late 1960s, governments all over the world—including the US—classified psychedelics as Schedule I drugs (i.e., designated under the Controlled Substances Act of the United States as having the highest potential for abuse and addiction, lacking safety under medical supervision, and having no recognized medical utility in treatment), putting a stop to both scientific study and legal medical application (Pollan, 2018). Some therapists persisted in utilizing psychedelics with individuals in underground settings despite the government's mandate (Renshaw, 2020). People continued to use psychedelics outside of therapeutic settings for healing purposes, especially in naturalistic scenarios, despite their Schedule I classification (Renshaw, 2020).

1994 – present

In the 1990s, there was a renewed focus on the therapeutic application of psychedelics as scientists attempted to reevaluate the drugs' possible advantages for mental health (Renshaw, 2020). Interest in the usage of psychedelics, such as psilocybin, MDMA, and ketamine, to cure ailments like PTSD, depression, and anxiety, started to surface by the 2000s. Promising outcomes from clinical trials, especially in the areas of trauma and end-of-life distress, have rekindled the debate over the medicalization of psychedelics. A new era of psychedelic-assisted therapy is being heralded by the FDA approval of psilocybin for depression and MDMA-assisted therapy for PTSD (Renshaw, 2020). Today, psychedelics are increasingly viewed as revolutionary medicines by those interested in their healing mechanisms. More specifically, in

2002, the American Psychological Association (APA) gave public support for furthering the research and therapeutic potential of using psychedelics (APA, 2022).

Neurobiological Mechanisms of Psychedelics

Trauma-related psychopathology (i.e., anxiety, depression, stress, PTSD) have unique neural circuitry; and therefore, it is important to consider how psychedelics influence the neural circuitry among the brain. Psychedelic compounds are fat-soluble molecules that easily pass through the blood-brain barrier and spread throughout the central nervous system and create short- and long-term changes in the structure and the function of individual neurons and synapses (Barksdale et al., 2024; Ly et al., 2018). Scientists have found that structural alterations, as a result of mental health disorders such as PTSD, may be reversed in the prefrontal cortex by substances that support both structural and functional neuronal plasticity. Such substances include numerous psychopharmacological interventions (e.g., antidepressants) and psychedelic compounds.

Short-term

The short-term impacts of psychedelics occur on a molecular and circuitry level. The prefrontal cortex's 5-HT_{2A} receptors are the primary targets of psychedelic use (Langlitz et al., 2024). Deep-layer pyramidal neurons have $_{2A}$ receptors on their apical dendrites, which are the ends of the neurons. Psychedelics increase the excitability of these dendrites, which causes a rise in activity and serotonin release (Langlitz et al., 2024). These result in behavioral (e.g., altered perceptions, behavioral flexibility, enhanced openness, and interpersonal connectivity), emotional (e.g., catharsis [processing of repressed emotions], heightened emotions awareness, reduced negative emptions), and cognitive (e.g., increased cognitive flexibility, altered sense of

self, enhanced insight, decreased default mode network [DMN] activity) impacts (Carhart-Harris & Friston, 2019; Nichols, 2016; Vollenweider & Kometer, 2010).

Long-term

Although the acute impacts of psychedelics are cited, it is known that the effects of psychedelics persist long after initial use. These short- and long-term impacts of psychedelics have been studied on a psychological and behavioral level. This is known as neuronal plasticity which has an impact on our learning and behavior (Barksdale et al., 2024; Ly et al., 2018). Scientists suggest this is why psychedelics may have such an impact on mental health states. Ly and colleagues (2018) highlight these structural and functional changes in their experiments with psychedelics, animals, and cell cultures. The data presented in their study demonstrates how psychedelics modify the structure and function of cortical neurons. Psychedelics promote both spinogenesis and synaptogenesis. Spinogenesis is the formation of dendritic spines which serve as the primary site of synaptic input, part of transmitting information and creating plasticity. Synaptogenesis is the formation of new synapses (Ly et al., 2018). Additionally, the serotonin receptor, 5-HT_{2A} mediates the effects of psychedelics on structural plasticity (Ly et al., 2018). Overall, these effects may underlie some of the therapeutic benefits of psychedelics, such as improved mood and cognitive function, by facilitating the rewiring of neural networks and enhancing the brain's ability to adapt and reorganize itself in response to new experiences and environments.

Therapeutic Mechanisms of Psychedelics

Psychedelics are known to aid in healing by enabling new self-understanding, breakthroughs in emotions, and elevated states of awareness (Carhart-Harris & Friston, 2019; Pollan, 2018). According to research, psychedelics may promote neuroplasticity, lessen fear

reactions, and aid in the processing of traumatic memories (Ly et al., 2018; Vollenweider & Kometer, 2010). These effects may help people reinterpret their experiences and create healthier coping strategies. Researchers have been focusing on psychedelics effects on individual's mental health states such as insight (Davis et al., 2021; Peill et al., 2022), consciousness (Orlowski, 2021), and memory (Magaraggia et al., 2021). Alongside this, there is curiosity into how psychedelics, when administered, elicit emotional processing through fear activation, incorporating new information, and modification of behavior (Wolff et al., 2024).

General Change Mechanisms Theory

The General Change Mechanisms (GCM) theory is a framework used in behavioral and psychotherapy sciences to explain how therapeutic interventions result in various outcomes (Grawe, 1997; 2004). It is utilized in behavioral sciences and psychotherapy. Through a variety of therapies and interventions, it aims to pinpoint the fundamental mechanisms that promote transformation. The five GCMs— (1) problem actuation, (2) resource activation, (3) clarification, (4) mastery, and (5) therapeutic relationship—were identified by Grawe (1997, 2004) based on substantial empirical data from controlled therapy trials and naturalistic studies of the process–outcome relationship in psychotherapy (Wolff et al., 2024). The GCM framework has been used in determining the emotional, behavioral, and cognitive changes that psychedelics elicit when used to comprehend the therapeutic effects of psychedelics (Wolff et al., 2024). The current study is focused on naturalistic psychedelic use and will therefore focus on first four GCMs (problem actuation, resource activation, clarification, mastery) as some individuals may engage in naturalistic psychedelic use in solitude.

Problem Actuation. Psychotherapy models frequently imply that in order for individuals to overcome their challenges, they must face and fully experience their problems, as well as the

unpleasant emotions that go along with them (Frank, 1961; Grawe, 1997; Orlinsky et al., 1994). The GCM theory refers to this as problem actuation. It is known that using psychedelics can result in a related construct known as challenging experiences or what some call "bad trips." These encounters may be accompanied by affective, cognitive, and sensory aspects of distress (Simonsson et al., 2023). Some believe that challenging experiences are not entirely “bad” and are in fact valuable, therapeutic parts of the psychedelic experience consistent with problem actuation (Gashi et al., 2021).

Studies have shown that overcoming obstacles while using a psychedelic can result in emotional or personal breakthroughs. There is a positive association between problem actuation and challenging psychedelic experiences and avoidance-related experiences (Barrett et al., 2019; Wolff et al., 2024). When comparing the General Change Mechanisms (GCMs) to challenging experiences and emotional breakthroughs that occur during naturalist psychedelic use, Wolff and colleagues (2020, 2022) discovered that emotional breakthroughs and challenging experiences were strongly associated with problem actuation, a critical component in therapeutic healing. Thus, emotional breakthroughs and challenging experiences elicit the problem actuation. The researchers found that people were less likely to view these challenging experiences as overwhelming or bad when they approached them with acceptance rather than avoidance (Wolff et al., 2024). This lends credence to the theory that psychedelic experiences might have therapeutic benefits when problem actuation takes place.

Resource Activation. According to research, adequate resource activation must be present in tandem with problem actuation for positive psychological outcomes to occur (Gassmann & Grawe, 2006). Using a patient's strengths, beliefs, and protective variables, resource activation, per the GCM framework, stimulates the individual’s approach-motivational

system rather than their avoidance-motivational system (Flückiger et al., 2010). Positive, values-driven behavior and personal development are promoted by this approach-motivational system (Flückiger et al., 2010; Grawe, 1997, 2004). By causing peak experiences that result in more favorable self-appraisals and worldviews, psychedelic experiences have demonstrated the ability to activate such resources (Kähönen, 2023). Insights from psychedelics, for instance, that promote positive perspectives on life or oneself, may function as experiences that activate resources and advance therapeutic goals.

Experts propose that the increased cerebral connectivity that results from psychedelics allows users to access ideas and experiences that are typically unavailable or blocked in regular states of awareness by evading ingrained cognitive habits (Grinspoon & Doblin, 2001). One notable finding is that when people take psychedelics, they may experience ego dissolution, which is a feeling of being less focused on oneself (Stoliker et al., 2022; Nour et al., 2016), in which strict and rigid boundaries (e.g., limiting beliefs) are temporarily dissolved. Ultimately, people report a sudden awareness of emotions, memories, perceptions that have otherwise been avoided (Nichols, 2016; Pollan, 2018). Through this, psychedelics can help people view their relationships, experiences, and situations in life from a different angle, which frequently results in significant insights regarding existential questions, traumas, or personal problems.

Significant treatment outcomes can be derived from these findings, according to clinical research as well. Research on the effects of psilocybin-assisted therapy for anxiety and depression, for example, has demonstrated that patients frequently acquire fresh insights into their diagnosis, which can result in long-lasting adjustments to behavior and mood (MacLean et al., 2011). These realizations can assist people in reframing unfavorable thought patterns, comprehending the causes of their emotional difficulties, and cultivating a feeling of purpose and

acceptance (Watts et al., 2017). Furthermore, it's common to hear accounts of profoundly transformational and important insights from psychedelic experiences, with long-lasting implications for wellbeing and personal development (Carhart-Harris et al., 2017; Pollan, 2018). The possibility of using psychedelics as psychotherapy tools has drawn more attention as a result, especially when it comes to helping individuals make progress when traditional therapy hasn't worked as well.

Clarification and Mastery. Two additional GCMs, clarification and mastery, are thought to result from interactions between the resource activation and problem actuation (Grawe, 1997, 2004; Grosse-Holtforth and Flückiger, 2012). Clarification is known as gaining awareness of unconscious motivations that shape one's behaviors and experiences while mastery refers to the practical experience of coping with previously challenging events (Grawe, 1997). Users of psychedelics frequently report having "mystical-type experiences," in which they feel deeply linked to the cosmos, at one with it, and possess a sense of something holy or heavenly (Johnson et al., 2019; Yaden & Griffiths, 2021). Additionally, users have reported having "emotional breakthroughs" which refers to experiencing catharsis or emotional release after overcoming difficult emotional states during or following the psychedelic experience (Roseman et al., 2019). These mystical experiences and emotional breakthroughs reported in naturalistic psychedelic use are linked to the GCM variables of clarification and mastery (Wolff et al., 2024).

Qualitative literature describes how psychedelics can lead to emotional coping skills including acceptance (Watts et al., 2017) and self-compassion (Renelli et al., 2020). Deep amazement, a loss of the typical sense of self, and a sense of transcending everyday reality are also characteristics of these experiences (Roseman et al., 2019; Johnson et al., 2019; Yaden & Griffiths, 2021). People who have mystical experiences may feel as though they are reaching a

greater truth or understanding. Such experiences are frequently accompanied by strong feelings such as joy, calm, or love. During the psychedelic experience, there may be a sense of timelessness or eternity, as time appears to lose its regular structure and flow (Roseman et al., 2019).

According to research, these encounters are frequently hailed as transformative, having a long-lasting positive impact on happiness, values, and quality of life (Kähönen, 2023). A user's thinking, the context in which the psychedelic is taken, and the dosage of the psychedelic all influence the possibility of a mystical experience. These deep, frequently mystical experiences are more likely to be facilitated by high doses, a good mental state, and a calm, supportive environment known as *set* (a person's internal state, which includes their psychological composition, expectations, intentions, and mood) and *setting* (the social and physical context of a psychedelic experience; Carhart-Harris et al., 2018).

Psychedelics for Treating Trauma-related Psychopathology

Symptoms such as depression, anxiety, stress, and PTSD are often reported after experiencing a traumatic event (Wang et al., 2023). Studies show that psychedelics can aid individuals dealing with mood and anxiety disorders, eating disorders (Breeksema et al., 2020), terminal illness (Schimmers et al., 2021), and obsessive-compulsive disorder (Graziosi et al., 2024). More specifically, survivors of sexual assault report long-term physical health problems (Irish et al., 2010; Sachs-Ericsson et al., 2014), increased rates of depression and anxiety (Choudhary et al., 2012; Cook et al., 2023; Dworkin, 2020), withdrawal from social support networks, and difficulties with social functioning following being assaulted (Hall et al., 2019). The potential of psychedelics to treat trauma-related psychopathology, including symptoms of depression, anxiety, stress, and PTSD, has shown evidence in recent years (e.g., Oehen et al.,

2013; Stroud et al., 2017; Roseman et al., 2018; Barone et al., 2019; Muttoni et al., 2019; Bird et al., 2021; Mitchell et al., 2021; Schimmers et al., 2021).

Depression

Depression is marked by a lingering sense of hopelessness, melancholy, and disinterest in activities (American Psychiatric Association, 2022). Because the emotional and psychological effects of trauma can impair a person's capacity for coping and meaning-finding in life, traumatic experiences have the potential to create and/or exacerbate these symptoms and result in a deeper and longer-lasting depressive state (O'Donnell et al., 2004). A group of neuroscientists proposed a theoretical model on a psychobiological and cellular level that explains how psychedelics lessen depressive symptoms through decreasing rumination and cognitive impairments such as negativity bias and poor emotional processing. Their model supports the potential for psychedelics to improve long-term cognitive flexibility (Magaraggia et al., 2021). The psychobiological and cellular impacts, they stated, together lead to the regulation of the hippocampus, amygdala, and prefrontal cortex which ultimately promote restoration of chronic stress and resilience (Magaraggia et al., 2021). Correspondingly, twelve participants with treatment-resistant depression participated in an open-label trial in which two psilocybin dosages combined with psychological support significantly reduced depressive symptoms (Carhart-Harris et al., 2016). These gains persisted for three months following therapy, starting one week later, and were still noticeable at the six-month mark (Carhart-Harris et al., 2017).

Muttoni and colleagues (2019) reviewed studies on the impact of depression on various psychiatric disorders and found that ayahuasca, psilocybin, and LSD had effects on symptoms of major depressive disorder and treatment-resistant depression. Their review of seven articles (e.g., Riba et al., 2001; Hilber & Chapillon, 2005; Fortunato et al., 2009; Fortunato et al., 2010a, b;

Santos et al., 2007; Griffiths et al., 2008) showed consistent symptom reduction in depression as well as anxiety following psychedelic use. This was upheld for naturalistic psychedelic use in a study of 2,510 adults who had at least one experience with psychedelics (Ko et al., 2023). Their self-report results showed reductions in depression, anxiety, and an improvement in overall wellbeing (Ko et al., 2023). Ko and colleagues (2023) findings add to an expanding body of evidence suggesting that, even when used outside of clinical settings, psychedelics may have a variety of positive effects on mental health symptoms.

Anxiety

Anxiety is characterized by a state of worry, fear, or uneasiness, frequently related to unknowns or occurrences in the future (American Psychiatric Association, 2022). Anxiety disorders may arise as a result of a traumatizing incident(s) because such experiences can increase sensitivity to perceived threats, intrusive thoughts, and a persistent state of hypervigilance (Grant et al., 2008). Like depression, Muttoni and colleagues (2019) found that psilocybin and LSD had positive impacts on anxiety associated with life-threatening cancer. This review examined the safety, tolerability, and adverse effect of the psychedelic substances administered.

Stress

Stress is the body's normal reaction to perceived dangers or difficulties, including mental, emotional, and physical reactions (Chrousos, 2009). Stress is oftentimes perpetuated by instances of trauma (Grant et al., 2008). The potential of psychedelics to reduce stress symptoms has drawn attention, especially for those with PTSD, chronic stress, and anxiety. According to research, psychedelics like LSD and psilocybin can lessen stress by encouraging emotional release, improving awareness, and are frequently linked to deep insights and experiences that

might result in long-lasting stress reductions and increased emotional resilience (MacLean et al., 2011). These drugs change brain connectivity and promote mental flexibility, which may help break the negative, repeated thought patterns linked to stress (Davis et al., 2020).

PTSD

Reexperiencing a traumatic event(s) through flashbacks or dreams, avoiding reminders of the trauma, increased alertness and responsiveness, and unfavorable changes in thinking and mood are common symptoms associated with PTSD (Wang et al., 2023). An individual's day-to-day functioning and quality of life is often impacted by these symptoms. The severity and duration of symptoms of PTSD varies; some people can recover from PTSD on their own with time, while others need long-term care to experience relief, including medicinal and behavioral interventions (Panin & Abercrombie, 2024).

Classic psychedelics have demonstrated potential in influencing how the brain processes emotions, which may be especially helpful for those suffering from PTSD. Studies have indicated that these psychedelics may lessen the amygdala's reactivity when processing emotions (Mueller et al., 2017). This is consistent with the theory that psychedelics lead to increased emotional processing which leads to decreased negative outcomes (Roseman et al., 2019; Davis et al., 2021). Since heightened amygdala activity is common in PTSD patients (Francati et al., 2007), this reduction aided by psychedelic use may help with some of the primary symptoms of the disorder. Few studies have examined the impact of classic psychedelics on PTSD specifically.

Rose (2024) demonstrated how psilocybin can facilitate the retrieval and integration of repressed traumatic memories by examining the accounts of two participants in a psilocybin-assisted retreat who previously were treatment-resistant. The results support the incorporation of

classic psychedelic use into trauma-focused treatment frameworks by offering a strong basis for investigating how psilocybin specifically might help enable the retrieval and integration of repressed traumatic memories. This process fosters conscious recognition and reconciliation of unresolved experiences (Rose, 2024).

The efficacy of MDMA for treating PTSD has drawn significant attention in recent years, especially from those with treatment-resistant forms of PTSD. Numerous double-blind, randomized controlled trials have bolstered support. Twenty people with treatment-resistant PTSD were split into two groups in study by Mithoefer and colleagues (2011); twelve underwent MDMA-assisted psychotherapy and the other eight received placebo-assisted psychotherapy. Participants in the MDMA group demonstrated significantly greater improvement than those in the placebo group, suggesting the benefits of MDMA-assisted psychotherapy for PTSD. However, a noted limitation and challenge of randomized control trial studies is the inability to have a “true placebo” given the effects of psychedelics (Aday et al., 2023).

A follow-up study was conducted to assess the long-term effects of MDMA-assisted psychotherapy in a sample of sixteen participants randomly assigned to receive MDMA or a placebo (Mithoefer et al., 2013). Results suggested the potential long-lasting benefits of MDMA-assisted therapy (Mithoefer et al., 2013). The effects of various MDMA dosages (75 or 125 mg) on a group of 26 first responders and veterans with chronic PTSD were further investigated by Mithoefer and colleagues (2018). The results, which builds on earlier findings and emphasizes MDMA's potential therapeutic efficacy in this patient population, demonstrated that even low dosages of the MDMA (75 mg) could reduce symptoms associated with PTSD. Furthermore, a study involving six women with treatment-resistant PTSD provided additional support for the benefits of MDMA-assisted psychotherapy (Bouso et al., 2018). The researchers highlighted the

need for additional research to further understand how MDMA can support this population (Bouso et al., 2008). These trials highlight the possibility of MDMA-assisted psychotherapy as a PTSD treatment, especially in situations where conventional therapies are not effective.

Yao and colleagues' (2024) extensive systematic review on the efficacy and safety of psychedelics for the treatment of mental disorders suggested that while research focuses on various trauma-related psychopathology (e.g., anxiety and depression), little research examines explicitly their (i.e., classic psychedelics) effect on PTSD. However, they do suggest that psychedelics, particularly MDMA, have potential effectiveness in targeting a reduction in PTSD (Yao et al., 2024). Only one article examining the impact of psychedelics on PTSD focused on sexual assault survivors (Bouso et al., 2018), which reinforces the need for research on this specific population.

Although classic and non-classic psychedelics have shown promise in treating various mental health issues, small sample sizes have been a limitation of many of the aforementioned studies, which can compromise the robustness of statistical results and the generalizability of findings (Aday et al., 2023). Researchers have highlighted methodological issues, such as inconsistent study quality, biases in participant selection, and variations in study designs. Additionally, even though they are frequently underreported, possible adverse outcomes of psychedelic use reveal the importance of interpreting existing psychedelic research with caution.

Survivors of Sexual Assault

Sexual assault is a widespread societal crisis that affects diverse groups; although, women are disproportionately targets of sexual assault perpetration (National Center for PTSD, n.d.). Borumandnia and colleagues (2020) found that one in three women worldwide will experience sexual assault in their lifetime. Further, members of the LGBTQ+ community

experience a greater rate of sexual assault compared to their heterosexual and cisgender counterparts (NISVS, 2023). The National Institute Partner and Sexual Violence Survey revealed that one in four lesbian women and almost half of bisexual women experienced rape during their lifetimes (Benner & Grove, 2023). Nearly half of all transgender people have been sexually assault at some point in their lives (National Sexual Violence Resource Center, 2019). Additionally, a 25-year review of literature revealed that while women are more likely to suffer from PTSD, they are less likely than men to have potentially traumatic experiences such as accidents, nonsexual assaults, disasters, or combat, but they are more likely to become victims of sexual assault and child sexual abuse, thus demonstrating the uniquely traumatizing effects of sexual assault related trauma on PTSD (Tolin & Foa, 2006).

Sexual assault, or the experience of unwanted sexual contact without explicit consent, can range in severity from unwanted sexual touching (e.g., smacking one's butt) to forcible rape. The psychological, emotional, and physical consequences of sexual assault can be greatly influenced by its severity in that more severe assaults are frequently associated with higher levels of trauma-related psychopathology (i.e., depression, anxiety, stress, PTSD) and interpersonal problems (Koss et al., 2024). Furthermore, a survivor's use of coping mechanisms, responsivity to interventions, and overall healing can all be impacted by the variable of severity. Regardless of type, sexual assault can have serious negative effects on one's physical, mental, and social well-being (e.g., Anwar et al., 2022; Campbell et al., 2009; Ullman et al., 1999). Short- and long-term outcomes on survivors may include depression (Spytska, 2024), substance use related-issues (Dworkin, 2020), PTSD (Spytska, 2024), and interpersonal issues (Lamoureux et al., 2012). Additionally, marginalized communities face heightened risk for the above negative outcomes following being sexually assaulted as well as additional obstacles to healing and the pursuit of

justice (Staples et al., 2021). Effective treatment must be individualized to meet each survivor's specific needs with consideration of their cultural context.

Utility of Psychedelics for Survivors of Sexual Assault

Research has recently highlighted the therapeutic benefit that psychedelics may provide survivors of sexual assault (Jardim et al., 2021; Tschauner & Johnson, under review), but there is still a lack of understanding about the underlying mechanisms that contribute to their potential healing effects. In contrast, evidence-based treatments (EBTs) for trauma, including those for sexual assault, are well-established and widely accepted. EPT currently represents the best theoretical starting point from which to explore the mechanisms of psychedelic treatment for psychological trauma. To deepen our understanding, we must integrate these empirically proven treatments that are rooted in EPT and investigate how psychedelics may produce similar therapeutic potential by using the EPT model. This integration could shed light on why psychedelics may be especially beneficial for trauma sufferers, providing fresh insights into effective therapeutic approaches. By broadening our understanding of these processes, this can lay the groundwork for developing innovative, trauma-informed understanding and approaches for facilitating the alleviation of trauma-related psychopathology. Further, mapping psychedelic use onto the model of EPT may help us address the underlying neurobiological and psychological factors contributing to trauma-related psychopathology in survivors who have engaged in naturalistic psychedelic use following their experience of sexual violence.

Emotional Processing Theory (EPT)

The development of numerous trauma interventions that are known to support recovery from a wide range of trauma experiences—particularly sexual assault-related trauma—has been guided by the EPT paradigm (Brewin & Holmes, 2003). Various studies since the proposal of

EPT have provided evidence into the effectiveness of emotional processing for the treatment of trauma (Brewin & Holmes, 2003). Further, clinical interventions for trauma-related psychopathology have been designed to include the key components of EPT, including deliberately modifying fear structures utilizing exposure techniques and cognitive restructuring (Foa & Kozak, 1986; Foa et al., 2016). Fear structures refer to the cognitive and emotional representations of fear that are stored in memory. These structures include information about the feared stimuli, physical and emotional responses to fear (such as increased heart rate, anxiety, or avoidance behaviors), and interpretations or beliefs about the feared situation (e.g., "This is dangerous," or "I am not safe"). Fear structures can become a problem when they are rigid, too generalized, or maladaptive, contributing to trauma-related psychopathology like PTSD.

Foa and colleagues' (2016) proposed an updated linear three-step process to modify maladaptive fear structures: (1) fear activation, (2) incorporation of new information, and (3) modification. Fear activation includes eliciting information about the feared stimulus situation in the form of thoughts, emotions, and physiological responses. Incorporation of new information refers to the development of novel interpretations about the meaning of the stimulus and response elements of the fear structure. Finally, modification involves a change in outcomes including the verbal, physiological, and overt behavioral responses.

During the initial developments of EPT, Lang and colleagues (1970) examined how well an automated systematic desensitization device could alter fear reactions following a traumatic event. The device guided an individual through relaxation techniques while presenting fear-related stimuli in a controlled and gradual manner, frequently using visual or auditory signals. The intention was to assist the patient in learning to associate these anxiety-inducing stimuli with relaxation. They called this the bio-informational theory of fear (Lang, 1977, 1979). In the first

experiment, the approach was applied to 29 female undergraduates; in the second trial, 15 women and five men were included. Greater initial heart rate reactivity during fear-relevant imagery, greater agreement between self-reported distress and heart rate elevation during fear-relevant imagery, and a systematic decline in heart rate reactivity with repeated exposure to the imagery were found to be the three predictors of successful reduction in trauma-related psychopathology (Lang et al., 1970). The significance of physiological and self-reported indicators in predicting the outcome of trauma-targeted therapies is underscored by these findings.

Foa and Kozak (1986) contributed to bio-informational theory with their updated model of EPT with a focus on processing and reduction of emotional information, namely fear. They suggest that memory structures encode emotions, and that anxiety arises from the activation of a fear-related structure (Foa & Kozak, 1986). These memory structures are altered during emotional processing. Three components of EPT: initial fear activation (IFA), within-session habituation (WSH), and between-session habituation (BSH), were examined in the context of exposure therapy in a meta-analysis of 21 previous studies (Rupp et al., 2016). Higher initial fear did not always imply better or worse outcomes, as the research showed that initial fear activation, or the degree of dread felt at the beginning of therapy, did not have a linear association with therapeutic outcomes. On the other hand, favorable results were associated with habituation within sessions, which is defined as the decrease in fear during a single therapy session. Better therapy outcomes were also associated with habituation between sessions, which is the decrease in fear over several therapy sessions.

Foa (2016) and Foa and Kozak (1986; 1998) stress that, in order to assist in habituation and modify fear responses, exposure to stimuli that cause anxiety is a crucial part of many

anxiety treatments. Their approach claims that cognitive defenses, high autonomic arousal, emotional states, and false beliefs that obstruct efficient reconstruction of fear memories are frequently the cause of treatment failures. In their updated EPT model, they propose that fear reduction associated with traumatic experiences is intricately influenced by fear reduction mechanisms known as fear activation, incorporating new information, and behavioral modification, which are outlined above (Foa et al., 2016). Variations of these mechanisms have been examined in empirical treatment studies outlined below.

Evidence-based Treatments for Trauma-related Psychopathology

The Departments of Veterans Affairs and Defense (VA) and the American Psychological Association (2017) both recommend various empirically supported treatments (EST) for adult PTSD. The majority of these ESTs are related to or based in EPT. These include emotion-focused therapy (Greenberg, 2004), cognitive processing therapy (CPT; Resick & Schnicke, 1993), narrative exposure therapies including written exposure therapy (WET; Sloan & Marx, 2019), eye-movement desensitization and reprocessing (EMDR; Shapiro, 1989), and prolonged exposure (PE; Foa et al., 2007; Foa et al., 2019). Although the methods and focuses of these treatments differ, they all aim to reduce avoidance of fear-related stimuli and negative trauma-related cognitions while promoting the acknowledgement of trauma-related content and methods for distress tolerance.

Applying Evidence-Based Treatments with Survivors of Sexual Assault

Interventions have been developed and show evidence for assisting survivors' in altering trauma-related psychopathology following being sexually assaulted (Miles et al., 2023; Parcesepe et al., 2014). Trauma-focused cognitive behavioral therapy (TF-CBT), Eye Movement Desensitization and Reprocessing (EMDR), Prolonged Exposure Therapy (PE), Cognitive

Processing Therapy (CPT), and integrative methods, such as somatic therapies and mindfulness-based stress reduction (MBSR) are strongly recommended to assist survivors in processing their trauma and promoting healing (Miles et al., 2023). Many of these interventions outlined below are rooted in EPT (Foa & Kozack, 1986).

Emotion-Focused Therapy. Identifying, analyzing, and modifying one's emotions is the aim of emotion-focused therapy (Greenberg, 2024). It seeks to encourage emotional awareness, expression, and regulation while highlighting the influence of emotional events in the formation of trauma-related psychopathology. Techniques including revisiting prior emotional events, expressing feelings in a secure setting, and confronting and processing unresolved feelings through role-playing or imagery may all be part of this process.

Two types of emotion-focused therapy were examined in a study of adult survivors of sexual assault including imaginal confrontation of perpetrators and empathic exploration of trauma material. Significant improvements were made in trauma symptoms including distress, self and interpersonal difficulties, and abuse resolution with both treatments, and these changes were sustained at follow-up (Paivio et al., 2010). Similarly, Zadafshar and colleagues (2021) examined the impact of existential group therapy and emotion-focused therapy on stress, anxiety, and depression in people who had been the victims of child sexual harassment. The findings indicated that whereas emotion-focused therapy had no discernible effect on depression, existential group therapy greatly reduced the symptoms of depression. However, anxiety was effectively reduced by both therapies, and emotion-focused therapy was superior to existential group therapy in lowering symptoms associated with stress (Zadafshar et al., 2021). Alternatively, for women who have experienced sexual assault in intimate relationships, Akbari and colleagues (2016) evaluated the efficacy of emotion-focused therapy finding impacts on

PTSD, self-esteem, depression, anxiety, and rumination. These results support the earlier study comparing emotion-focused therapy with imaginal confrontation and empathic exploration, highlighting the significance of customizing interventions to the unique needs and symptoms of trauma survivors and supporting the notion that different therapeutic approaches may vary in their effectiveness across various emotional and psychological outcomes.

Cognitive Processing Therapy. CPT is a cognitive therapy developed by Resick and Schnicke (1993). It typically consists of twelve sessions guiding the individual to write an impact statement, recognize thoughts and emotions, and two written accounts of the traumatic event(s). Participants then engage in daily reading in between sessions, as well as cognitive restructuring pertaining to views on the significance of the incident and the life-altering effects of the trauma. The second part of the treatment focuses on beliefs that may have been affected by the traumatic encounter, including beliefs about safety, intimacy, power/control, esteem, and trust (Resick & Schnicke, 1993).

Iverson and colleagues (2014) examined the effects of CPT for PTSD and found a connection between PTSD and depressive symptoms and changes in trauma-related beliefs after analyzing written impact statements from 50 women who had been diagnosed with PTSD following an incident of being sexually assaulted. The women had been evaluated at the beginning, end, and five to ten years after treatment. More specifically, higher symptomatology was linked to increases in over accommodated thinking and decreases in assimilated thinking, whereas improvements in accommodated thinking were linked to lower symptoms. Interestingly, another study (Keefe et al., 2017) found that participants in a PE intervention group had higher dropout rates than those in a CPT intervention group. These findings suggest that CPT may be more beneficial for individuals with treatment-compliance related concerns.

One study assessed how 32 veterans with PTSD following an experience of military sexual trauma managed symptoms of suicide thinking after receiving a CPT intervention. Over the course of treatment and follow-up, the results showed a reduction in negative views of self and an increase in views of self-worth (Holliday et al., 2018). These results highlighted that CPT might be useful in treating cognitions related to suicide, but more studies with a bigger sample size and are required for further validation.

EMDR. Grounded in EPT, EMDR is a technique that requires clinicians to assist their clients in recalling upsetting memories while simultaneously using bilateral stimulation and guided eye movement (Laliotis et al., 2021; Shapiro, 1987; 1989). The first randomized clinical trial using EMDR was conducted in 1989 and included survivors of sexual assault. Their results evidenced significant desensitization and symptom reduction following participation in EMDR (Shapiro, 1989).

Results have shown that through emotional processing in this form, the trauma's emotional impact is lessened, and the person is able to integrate the experience in a new and more effective way (Laliotis et al., 2021). Some research indicates that EMDR is more effective than other interventions (e.g., CBT, PE) at significantly reducing the symptoms of trauma, also in a more condensed treatment model, making it a valuable treatment for PTSD and other trauma-related diseases (De Jongh et al., 2019). Other studies, outlined below, show equivalence between EMDR and PE (Rothbaum et al., 2005). Schwarz and colleagues (2019) found that eight sessions of EMDR lowered levels of anxiety, depression, PTSD, and overall functioning for female survivors of sexual assault. Their analyses, which included a qualitative component, also noted increased hope and confidence in the survivors (Schwarz et al., 2019).

Prolonged Exposure. To lessen the emotional impact of trauma-related memories, feelings, and events, PE is an intervention that entails controlled, and sometimes repeated, exposure to feared stimuli (Resick et al, 2002; Foa et al., 2005). This is directly related to the fear activation component of EPT. The intention is to support people in processing and reducing the fear and anxiety they have related to the trauma. The goal of PE is to promote emotional processing through deliberate systematic confrontation with trauma-related stimuli (Foa, 2011).

A randomized control trial examined the effectiveness of prolonged exposure compared to therapy as normal for adolescent girls who had experienced sexual abuse and met the criteria for PTSD (Foa et al., 2013). Participants showed improved PTSD symptom severity scores as well as improvement on all secondary outcomes (e.g., global functioning, no longer meeting the PTSD diagnosis criteria, and symptoms of depression). During the 12-month follow-up, these treatment differences persisted for depression, global functioning, self-reported PTSD, and loss of PTSD diagnosis. These findings evidence the short- and long-term outcomes for emotional processing activated through PE intervention.

Prolonged exposure therapy and cognitive processing therapy were compared in a Veteran's Health Administration clinic to examine the effectiveness of these evidence-based practices in the veteran population (Jeffreys et al., 2014). Both PE and CPT were found to reduce PTSD Checklist (PCL-5; Blevins et al., 2015) scores when examining the charts of patients. However, PE therapy was significantly more effective when controlling for demographic variables such as age and ethnicity (Jeffreys et al., 2014). This runs counter to a study of female survivors of sexual assault that directly compared CPT with PE and found no differences in the outcomes between the two treatments (Resick et al., 2002). The results are conflicting, but PE appears to be more effective than CPT in reducing symptoms of PTSD when demographic

variables such as age and ethnicity are taken into account (Jeffreys et al., 2014). This suggests that exposure-based therapies that promote fear activation processes are particularly effective in treating fear responses related to trauma. It is important to individualize treatment approaches based on survivor needs rather than assuming a one-size-fits-all solution.

Rothbaum and colleagues (2005) examined differences in PE and EMDR on PTSD symptoms of 74 adult female rape victims. According to the results, there were no significant differences in the efficacy of PE or EMDR between the beginning of treatment and the post-treatment or 6-month follow-up for any of the outcomes that were examined (e.g., depression, anxiety, PTSD, depersonalization, avoidance). Similar improvements in trauma-related symptoms were seen with both interventions, indicating that their efficacy in treating trauma is comparable. Similarly, in a sample of sexual assault survivors who underwent a randomized control trial comparing PE with supportive counseling, there were significant improvements in PTSD symptom severity for those who received PE when compared to those who received supportive counseling, highlighting the potentially unique benefit of approaches based in EPT (Foa et al., 2013). This highlights why some treatments may be more effective for some individuals in different contexts and why we need evidence for additional modalities of treatment.

Studies emphasize the significance of cultural humility in the use of interventions (e.g., PE, CPT) with sexual assault survivors, especially when utilized with clients from varied backgrounds (Garcia et al., 2023). This reinforces why the current research study, based in indigenous traditions, exploring alternatives treatment options through naturalistic psychedelic use, is needed. This entails conducting assessments that take cultural nuances into account, developing relationships, offering focused psychoeducation, and removing engagement hurdles.

Therapists can increase the specific interventions' relevance and efficacy by adopting a culturally humble approach, which will help the therapy connect with the client's identity and lead to better results (Garcia et al., 2023).

Written/Narrative Exposure Therapy. Narrative exposure therapy was developed through synthesis of autobiographical memory theory (Conway, 2001) and EPT (Foa & Kozak, 1986; Robjant & Fazel, 2010; Schauer et al., 2004). Narrative exposure therapy places a focus on constructing a coherent story of the client's life to integrate the traumatic memory with the context of the person's overall existence. This is one of the primary theoretical distinctions between narrative exposure therapy and the other EPT evidence-based interventions. Although EPT interventions have common components, some are considered more effective than others. Mørkved et al. (2014) argue that narrative exposure therapy is more effective than PE therapy based on their review of clinical trials despite various commonalities rooted in EPT found in their treatment manuals. They added that narrative exposure therapy may be more beneficial for those with more complex trauma (Mørkved et al., 2014). Complex trauma is considered exposure to a number of traumatic incidents that happen frequently in the context of interpersonal relationships during childhood or adolescence, oftentimes including sexual assault (Williams, 2006).

Research exploring which evidence-based intervention are most effective for sexual assault-related trauma remains limited. Considering PE and emotion-focused therapies are guided by EPT and require the revisiting of trauma experiences entirely, it is necessary to follow this trend when examining the use of psychedelics as a possible mechanism for impacting trauma-related psychopathology in survivors of sexual assault. Although these interventions have empirical support, they do not demonstrate effectiveness for everyone and different approaches

might work better for different individuals/types of trauma. Also, there are many barriers to accessing treatments in clinical settings including money, time, stigma and even cultural mistrust. This highlights the importance of thinking about treatments outside of the "professional" realm including naturalistic types of treatments and treatments based in indigenous roots (e.g., psychedelics).

TF-CBT. To address distorted thinking and trauma psychopathology, TF-CBT integrates conventional CBT methods with trauma-sensitive interventions (Nurhalimah et al., 2024). TF-CBT interventions have been mostly focused on children and adolescent survivors (Konanur & Muller, 2024); however, recent studies have expanded their populations to include adult survivors as well (Littleton et al., 2016; Littleton & Grills, 2019). TF-CBT often includes elements like trauma narrative construction, cognitive restructuring, relaxation techniques, and psychoeducation (Knutsen & Jensen, 2017). To promote healing and assist survivors in processing their traumatic experiences, TF-CBT is known to treat trauma-related psychopathology following a sexually traumatic experience (Nurhalimah et al., 2024). Further, TF-CBT versus CBT alone is found to be more effective with this survivor population (Ehring et al., 2014).

A TF-CBT intervention known as STEPS which includes psychoeducation, exposure, cognitive restructuring, and relapse prevention components significantly reduced trauma psychopathology in a cohort of 55 female adolescent survivors of sexual assault following the nine-session intervention (Bicanic et al., 2014). These results were sustained in Belleville and colleagues' (2018) experiment examining the effectiveness of cognitive behavioral treatment (CBT) plus imagery rehearsal therapy (IRT) to CBT alone. After treatment, both groups showed significant improvements in trauma psychopathology (e.g., PTSD); however, the group in which

participants received integrative IRT and CBT intervention had a more significant decrease in symptoms. Again, in comparison to a psycho-educational self-help website, the effectiveness of the *From Survivor to Thriver* program—a TF-CBT intervention for college women with sexual-assault related PTSD—evidenced that the TF-CBT program significantly reduced PTSD, depressive, and anxiety symptoms in adults (Littleton et al., 2016; Littleton & Grills, 2019).

Effect of Time. As the healing process from sexual assault-related trauma frequently develops gradually and independently for each individual, time is an essential variable in the healing process (Frazier et al., 2004). The severity of traumatic symptoms may gradually lessen for survivors as their brains comprehend what happened and start to heal. It may take individuals time to develop new coping mechanisms, rebuild their openness to trusting others, and gain a sense of safety and security in their environments. But time alone isn't always enough; in the absence of supportive interventions, some survivors can still be impacted by their previous trauma experience and deal with the subsequent negative outcomes (i.e., trauma-related psychopathology) long after their trauma has occurred.

Individuals with acute stress disorder, a diagnosis which describes symptoms that occur in the initial month following trauma exposure, experience symptom resolution within the first month with only a subset progressing to meet criteria for PTSD (Brier et al., 2020). For those who develop chronic PTSD, symptoms tend to become more entrenched and resistant to treatment over time (McFarlane, 2018). Controlling for time since trauma will also allow us to explore how naturalistic, classic psychedelic use may differentially impact individuals based on the chronic nature of their symptoms. By doing so, it allows for the examination of whether the psychedelics are particularly effective in addressing longstanding traumatic memories, which are often less responsive to conventional treatments. Therefore, while time is often a critical factor in

survivors' healing processes, there is also the importance of methods of coping including, but not limited to, the empirically supported treatments articulated above. Another avenue for healing may be the use of psychedelics, within or outside of the clinical setting.

Emotional Processing Theory Treatments & Psychedelics

The process of healing via psychedelics may be comparable to EPT in that both methods propose to assist patients in integrating and reprocessing painful memories and emotions (Foa & Kozak, 1986; Foa et al., 1995; Wolff et al., 2024). By assisting survivors in facing and processing painful experiences on an emotional level, therapeutic interventions based in EPT (e.g., TF-CBT, PE, CPT) aim to lessen the fear response in patients, which in turn reduces symptoms such as avoidance and anxiety (Foa et al., 2016). In parallel, psychedelics have the capacity to elicit strong emotional responses that allow survivors to revisit and reinterpret painful experiences. These responses frequently result in emotional breakthroughs and long-term psychological transformations (Roseman et al., 2019). To attain psychological resilience and healing, psychedelics appear to encourage similar processes of change to therapeutic interventions based in EPT, including facing and processing challenging emotions (see Figure 1). However, to date, no research has examined whether the mental health benefits of psychedelics are related to their assistance in survivors' emotional processing, consistent with EPT.

Modlin and colleagues (2024) synthesized findings between 2010 and 2023 on psychedelics and evidenced based interventions for treating trauma-related psychopathology. They found contrasts between evidenced-based psychotherapies and psychedelic-assisted therapy in clinical settings. For example, participants receiving evidenced-based psychotherapy highlighted the burden of PTSD treatment, the importance of readiness, mechanisms of change, and the need for safety and trust in the treatment environment (Modlin et al., 2024). On the other

hand, therapeutic psychedelic experiences focused on rearranging self-narratives and processing indirect trauma. There were similarities between the two including the importance of psychological safety and the mechanics of change. Regarding psychedelic-assisted psychotherapy, the authors stated the following . . .

> Trauma-related material appeared in the form of visualizations, disturbing conscious and previously repressed memories, somatic trauma responses, and emotional states such as grief and fear. Some patients reported how the treatment supported integrating traumatic incidents into their lives or unburdening themselves from its weight as part of the change process (Modlin et al., 2024, p. 121).

These valuable reported outcomes from psychedelic experiences greatly align with EPT. Given this alignment, it is worthwhile to investigate how psychedelics, which may allow access to repressed material and emotional states, can map onto EPT (see Figure 1). Furthermore, using the GCM framework, problem actuation, resource activation, clarification, mastery, to evaluate these psychedelic experiences could shed light on how these psychedelics elicit modification, ultimately driving trauma-related psychopathology reduction outcomes (see Figures 1-3). This integrative approach might improve our understanding of how psychedelics promote recovery in survivors of sexual assault. By deepening our knowledge of these mechanisms, we create the groundwork for developing new, trauma-informed theories and strategies for aiding in the treatment of psychopathology associated with sexual assault-related trauma. Furthermore, in survivors who have used naturalistic psychedelics after experiencing sexual violence, mapping psychedelic usage onto the EPT model (see Figure 1) may help address the underlying neurobiological and psychological variables that contribute to trauma-related psychopathology.

Overall, considering psychedelics impacts on an individual's neurobiological states and cited impact on trauma-related psychopathology in various populations of trauma survivors, it is of question whether naturalistic psychedelic use and its outcomes map onto EPT in survivors of sexual assault. The hypothesized and alternative models in this study aim to answer this question with the goal of providing recommendations for both clinical interventions and naturalistic use.

Conclusion

In summary, examining naturalistic psychedelic use through the EPT paradigm is necessary for gaining more understanding in why psychedelics may aid the trauma-related psychopathology in survivors of sexual assault. The potential of psychedelics to enable the surfacing of repressed memories, bodily trauma reactions, and powerful emotional states—such as sadness and fear—parallels the processes important to EPT, where trauma access and processing is critical for modification. This is critical because the processing of these emotions and feelings associated with experiences of trauma can help integrate the trauma into the survivors' healing, which in turn can promote healing in survivors and overall functioning. Finaly, both frameworks, EPT and GCM stress the significance of processing and gaining access to emotional experiences to facilitate healing when it comes to trauma. GMC agrees with EPT's emphasis on changing maladaptive emotional reactions by endorsing the idea that psychedelics can assist people in facing suppressed memories through fear activation and make meaning through resource activation, clarification, and mastery. Psychedelics may facilitate the kind of emotional processing, that is problem actuation, incorporation of new information, modification, that EPT recognizes as essential for trauma recovery.

Chapter III

Method

Participants

Participants were eligible for inclusion in the study if they (a) were at least 18 years old, (b) had survived an incident of sexual assault during adolescence or adulthood, (c) were able to read, write, and speak English fluently, (d) currently resided in the United States, and (e) had previously taken a dose of a classic psychedelic that produced moderate to strong psychoactive effects after their experience of sexual assault (see Appendix A). Individuals who met eligibility criteria were referred to an online Qualtrics survey that included a questionnaire and an electronic informed consent form (see Appendix B). An a priori power analysis for structural equation modeling (SEM) was conducted using Soper's (2021) program, which applies Westland's (2010) algorithm to determine lower bounds on SEM sample sizes. Results indicated that a minimum sample of 100 participants was required for both the hypothesized and alternative models to achieve 80% power to detect a medium effect size at an alpha level of .05. To account for potential missing data and ensure adequate statistical power, the target sample size was set at 250 participants, consistent with Kline's (2015) recommendation that SEM analyses include more than 200 cases to qualify as a large sample.

Procedure

Approval from Lehigh University's Institutional Review Board was granted before data collection began. Prolific, an online recruitment tool, was utilized to collect participant data using a convenience sampling survey methodology. Screening settings were set to ensure participants meet the eligibility requirements. Five validation check items to assess attentiveness and accuracy of responses were interspersed throughout included measures. The purpose of these

checks was to ensure that participants answered questions intentionally. Participants who answered at least three out of five of validity checks correctly were included in the analysis. Participants were paid $3.00 for completing the survey, if three of the five validity checks are attended to correctly. The survey took approximately 25 minutes to complete.

We recognized the importance of including Indigenous perspectives in every stage of psychedelic research (Celidwen et al., 2023). For the present study, I consulted with one Indigenous author and researcher who provided guidance on study procedures and offered feedback throughout the research process. This consultation supported the ethical and culturally informed representation of Indigenous customs and knowledge related to the use of psychedelic plant medicines. The consultant's input informed multiple stages of the study, including the study design, interpretation of findings, and framing of future research directions. Feedback was obtained through written correspondence and was used to ensure that Indigenous perspectives were accurately and respectfully integrated into the study narrative.

Measures

Demographic Information

Descriptive statistics and internal consistency (using Cronbach's α) were calculated for each measure within the study sample. A demographics questionnaire was used to screen for the eligibility characteristics noted above and to collect data on participants' age, country of origin, relationship status, race, ethnicity, gender, sexuality, nationality, income, and employment status (see Appendix A).

Psychedelic Experiences

To provide descriptive information about prior psychedelic experiences, an adapted version of William et al.'s (2022) eight-item multiple choice questionnaire was used to assess the

type of psychedelic substance used, memory of the experience, and subjective dose (e.g., low, moderate, moderately high, high [see Appendix C]). Participants were also asked about the "set" and "setting" of their psychedelic experiences (i.e., where they took the psychedelic and with whom).

Sexual Assault Severity

The Sexual Experiences Survey Short Form Victimization (SES-V; Koss et al., 2024) was designed to measure the construct of sexual exploitation since an individual's 14th birthday [see Appendix D]). The multi-item measure asks respondents to answer the frequency at which a specific unwanted sex act has occurred (0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10+) since the age of 14. For the current study, we utilized all four modules of the measure including (1) Non-contact, (2) Technology-facilitated, (3) Illegal (largely penetrative), and (4) Verbally pressured sexual exploitation. There are a number of ways to score this measure. For the current study, given the potential impact of severity, we will focus on the severity scoring. At its development, feasibility and validity of the SES-V was shown through psychometric comparison between the earlier version of the instrument (SES-SFV; Koss et al., 2007) which has established reliability and validity statistics (Koss et al., 2024). For the current study the SES-V demonstrated good internal consistency across the four modules respectively ($\alpha = .81$; $\alpha = .90$; $\alpha = .98$; $\alpha = .98$).

Emotional Processing Theory

The General Change Mechanisms Questionnaire (GCMQ; Wolff et al., 2024) was used to measure several constructs in the model (see Appendix E). The scale items were anchored in the psychedelic experience that incorporated the processing of their sexual assault experience. The subscales of the measure were utilized to measure the first two components of EPT including fear activation via problem actuation and incorporation of new information via resource

activation, clarification, and mastery. At its development, the problem actuation, resource activation, clarification, and mastery subscales of the GCMQ demonstrated good internal consistency (α = .90; α = .90; α = .91; α = .91; Wolff et al., 2024). Cronbach's alpha for each subscale is reported.

Fear Activation. The first step in EPT, fear activation, will be measured using a subscale of the GCMQ known as problem actuation (see Appendix E). The problem actuation subscale from the GCMQ consists of 5-items (Wolff et al., 2024). Participants will be asked to rate the extent to which the items (e.g., "I experienced feelings that I previously avoided") apply to their psychedelic experience that incorporated their sexual trauma on a 6-point Likert-scale from 0 (*not at all*) to 5 (*extremely*). For the current study, the problem actuation subscale demonstrated high internal consistency (α = .93).

Incorporation of New Information. The second step in EPT, incorporation of new information, was measured using three observed variables predictors of the latent variable of 'incorporation of new information.' The predictors variables were measured using three subscales, resource activation, clarification, and mastery, of the GCMQ (Wolff et al., 2024 [see Appendix E]).

Resource Activation. The 5-item resource activation subscale from the GCMQ was used to measure this construct of the incorporation of new information portion of EPT (Wolff et al., 2024 [see Appendix E]). Participants were asked to rate the extent to which the items (e.g., "I became aware of things that I am thankful for"; "I felt in contact with my strengths") apply to their psychedelic experience on a 6-point Likert-scale from 0 (*not at all*) to 5 (*extremely*). For the current study the resource activation subscale of the GCMQ demonstrated high internal consistency (α = .95).

Clarification. The 5-item subscale of clarification from the GCMQ was used to measure this component of incorporating new information from the EPT model (Wolff et al., 2024 [Appendix E]). Participants were asked to rate the extent to which the items (e.g., "It became clearer to me why I tend to react in certain ways to difficult situations") apply to their psychedelic experience on a 6-point Likert-scale (0 = *not at all*; 5 = *extremely*). For the current study the clarification subscale demonstrated high internal consistency (α = .94).

Mastery. The mastery observed variable, aimed at measuring this component of the latent variable of incorporating new information, was measured using a 5-item subscale of the GCMQ (Wolff et al., 2024 [Appendix E]). Participants were asked to rate the extent to which the items (e.g., "I made progress in coping with my problems") apply to their psychedelic experience on a 6-point Likert-scale (0 = *not at all*; 5 = *extremely*). For the current study the mastery subscale demonstrated high internal consistency (α = .95).

Modification. The final portion of EPT, modification, was measured through the latent construct of trauma-related psychopathology with four underlying observed variables: depression, anxiety, stress, and PTSD.

Depression, Anxiety, and Stress. The Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995) is a widely used measure to assess symptoms related to depression, anxiety, and stress (see Appendix F). The DASS-21 includes 21 statements asking respondents to report the level at which the experienced symptoms over the last 30 days on a 4-point scale (0 = *Did not apply to me at all*; 1 = *Applied to me to some degree, or some of the time*; 2 = *Applied to me to a considerable degree or a good part of time*; 3 = *Applied to me very much or most of the time*). This measure has three subscales that assess depression (DASS21-D, seven items; e.g., "I felt downhearted and blue"), anxiety (DASS21-A, seven items; e.g., "I felt that I was using a lot

of nervous energy"), and stress (DASS21-S, seven items; e.g., "I found myself getting agitated") symptoms. The means of the three DASS-21 subscales were used as observed indicators of the trauma-related psychopathology latent variable. Higher scores represent higher symptomatology of depression, anxiety, and stress, and thus, contribute to greater trauma-related psychopathology. At development of the DASS-21, the scale demonstrated excellent internal consistency (α = .93), and multiple subsequent studies have demonstrated evidence for its convergent, discriminant, and factorial validity (Bride & Kintzle, 2011; Hensel et al., 2015). The current study aligned with previous psychometric properties demonstrating excellent internal consistency (α = .97; [DASS21-D, α = .94; DASS21-A, α = .91; DASS21-S, α = .92]).

Posttraumatic Stress. The Posttraumatic Stress Disorder Checklist for the DSM-5 (PCL-5; Blevins et al., 2015) is a robust 20-item self-report measure used to measure the 20 DSM-5 symptoms of PTSD (see Appendix G). The PCL-5 was utilized in this study to assess trauma-related psychopathology that is directly tied to experiences of sexual assault, offering a direct evaluation of the influence of sexual violence experiences on survivors' trauma-related psychopathology. Participants were asked to rate how much they have been bothered by specific problems over the last 30 days (e.g., repeated, disturbing dreams of the stressful experience) on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The total mean score of the PCL-5 was used as one of the observed indicators of the trauma-related psychopathology latent variable. Higher scores contribute to greater trauma-related psychopathology. At its development, the PCL-5 demonstrated good reliability and validity (Belvins et al., 2015). The current study aligned with previous psychometric properties demonstrating excellent internal consistency (α = .97).

Analysis Plan

Data Diagnostics

The data was cleaned and screened using IBM SPSS v. 29 (Arbuckle, 2022). Analyses included participants who correctly answered at least three of the five validity questions and completed at least 80% of the survey. Full information maximum likelihood (FIML) estimation was used to handle missing data, enabling the inclusion of all accessible data points in the analysis (Baraldi & Enders, 2010). To guarantee consistency across analyses missing at random (MAR) data, model fit indices were calculated using FIML.

Prior to SEM analyses, the normalcy of the data was assessed. Recommendations for skewness values between -2 and 2 and kurtosis values between -7 and 7 were used to evaluate the univariate normality requirements (Curran et al., 1996). Additionally, normal probability plots for each variable was assessed to ensure normal distributions. Bivariate scatterplot matrices of the study variables were used to evaluate bivariate normality (Pituch & Stevens, 2016).

Analytic Strategy

To answer the research question, the hypothesized and alternative models (see Figures 2 and 3) were evaluated to determine model fit using AMOS Version 29 software (Arbuckle, 2017). The hypothesized model included one exogenous observed variable (fear activation) and two latent endogenous variables (incorporation of new information and trauma-related psychopathology). The alternative model included four exogenous observed variables (problem actuation, resource activation, clarification, and mastery) and one latent endogenous variable (trauma-related psychopathology). For both models, sexual trauma severity and time since sexual assault were added as covariates.

Prior to comparing the hypothesized and alternative structural models, a confirmatory factor analysis (CFA) was conducted to assess the measurement model. This step ensured that the latent constructs were adequately represented by their observed indicators. Model fit indices were evaluated using the following *a priori* values: non-significant χ^2 test (Weston & Gore, 2006); .90 or greater for the comparative fit index (CFI) and the Tucker-Lewis index (TLI; Hu & Bentler, 1999; Marsh et al., 2004; Weston & Gore, 2006), lower than .10 for the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993), and Standardized Root Mean Square Residual (SRMR; Weston & Gore, 2006). Because chi-square values are known to be sensitive to large sample sizes (Cheung & Rensvold, 2002; Weston & Gore, 2006), the current study relied on agreement among the other three fit indices to determine good model fit. To find which model best fits the data, the Bayesian Information Criterion (BIC) values of the alternative and hypothesized models were compared. A better balance between model fit and complexity is shown by lower BIC values, which serve as an indicator of model parsimony (Schwarz, 1978). Given that it implies a more ideal trade-off between explanatory power and simplicity, the model with the lowest BIC will be chosen as the best-fitting model.

Chapter IV

Results

Participant Characteristics

Participants (N = 230) ranged in age from 18 to 75 years or older, with most of the participants between 25-34 years old (n = 89, 38.7%) and 35-44 years old (n = 52, 22.6%). One hundred and forty-six participants identified as women (63.5%), 82 identified as men (35.7%), two identified as nonbinary/third gender (0.9%). Regarding race and ethnicity, 167 participants (72.6%) identified as White, 42 (18.3%) identified as Black or African American, 20 (8.7%) identified as Hispanic, Latinx, or of Spanish origin, 14 (6.1%) identified as Asian, six (2.6%) identified as Native, Indigenous, or American Indian, and three (1.3%) identified as Middle Eastern or North African.

Regarding religion, 100 participants (43.5%) identified with a Christian religion, 24 (10.4%) identified with another religion (e.g., Buddhist, Jewish, Muslim; Islamic; Hindu; Orthodox), and 58 participants (25.3%) identified as Agnostic or Atheist, and 49 participants (21.3%) identified as spiritual but not religious. Regarding sexual identity, 161 participants (70%) identified as straight, 43 (18.7%) identified as bisexual, eight (3.5%) identified as gay, six (2.6%) identified as lesbian, five (2.2%) identified as asexual, and three participants (1.3%) indicated they preferred not to disclose their sexual identity. Most participants (n = 126, 54.8%) reported being employed full-time. The remaining participants were employed part-time (n = 56, 24.3%), students (n = 11, 4.8%), unemployed and looking for work (n = 28, 12.2%) unemployed and not looking for work (n = 10, 4.3%) or retired (n = 5, 2.2%).

Sexual Assault Severity

More than half (*n* = 127, 55.2%) of the participants endorsed their sexual assault experience occurred more than nine years ago, while eight (3.5%) participants reported being sexually assaulted within the past year; 25 (10.9%) one to three years ago; 18 (7.8%) three to five years ago; 24 (10.4%) five to seven years ago; 27 (11.7%) seven to nine years ago. Each participant in the study endorsed at least one experience of sexual assault according to the SES-V (Koss et al., 2024). With regard to specific sexual acts endorsed, 98.7% reported experiencing penetrative contact (*n* = 227), 43% (*n* = 99) endorsed attempted penetrative contact, 90.0% (*n* = 209) reported non-penetrative contact, 92.6% (*n* = 213) reported cybersex, and 93.5% (*n* = 215) reported non-contact (e.g., no direct touching). Dichotomous scoring by each module revealed that 215 (93.5%) participants experienced non-contact sexual exploitation, 213 (92.6%) experienced technology-facilitated sexual exploitation, 224 (97.4%) experienced illegal sexual exploitation, and 203 (88.3%) experienced verbally pressured sexual exploitation. The SES-V severity score was a continuous variable calculated by summing the number of endorsed victimization items across the four modules. The mean severity score was 165.02 (*SD* = 196.80), with scores ranging from 1 to 924. Due to the positive skewness, the severity score was square root transformed prior to analyses (*M* = 11.02, *SD* = 6.62).

Psychedelic Experiences

Participants predominantly reported the use of psilocybin (*n* = 118, 51.3%) and LSD (*n* = 81, 35.2%). The remaining 35 participants (15.2%) endorsed using ayahuasca, DMT, mescaline, and peyote. Ages at use of psychedelics were predominately between 16 and 35 years old (*n* = 181, 78.7%). The majority of participants (*n* = 184, 80.5%) characterized the dose of the psychedelic experience as moderate and moderately high. The duration of the psychedelic

experiences ranged from less than 30 minutes (n = 9, 3.9%) to 10 to 15 hours (n = 17, 7.4%), with the majority lasting two to six hours (n = 134, 58.3%). Post-hoc analyses involving differences related to dose of psychedelic experience are discussed below.

Preliminary Analysis

The initial sample included 312 participants, which were screened for eligibility and response validity. Sixty-one participants (19.6%) were removed because they did not endorse having taken a dose of a psychedelic that produced a moderate to strong effect since being sexual assaulted. An additional four participants (1.7%) were excluded because they did not endorse a history of sexual assault. Finally, 17 participants (7.3%) were removed for not accurately responding to three out of five validity checks. The final sample consisted of 230 participants (73.7%) who were retained for all subsequent analyses.

Missing data ranged from 0 to 1.7% across variables and were handled using full information maximum likelihood (FIML) estimation, which retains all available cases under the assumption of missing at random (MAR; Baraldi & Enders, 2010). Patterns of missingness were examined by comparing participants with complete data to those with missing data on key study variables (e.g., age, trauma severity, and primary outcome variables). No significant differences were found between these groups, supporting the MAR assumption. Accordingly, FIML was used to estimate all model parameters and fit indices in AMOS Version 29 (Arbuckle, 2022).

Prior to analyses, data were examined for univariate and multivariate normality. Skewness and kurtosis values for study variables fell within the predetermined acceptable range, except for the skewness value for the sexual assault severity variable (skewness = 2.07). As such, a Square Root Transformation was adopted for the sexual assault severity variable, and skewness and kurtosis values then fell within the acceptable range (as shown in Table 1). Normal

probability plots for each variable were examined to assess univariate normality, and the distributions appeared approximately normal with no major violations. Additionally, bivariate scatterplot matrices of the study variables were evaluated to assess bivariate normality, and no substantial departures from linearity or normality were observed (Pituch & Stevens, 2016). Descriptive statistics and bivariate correlations among all study variables are presented in Table 1, including means, standard deviations, skewness and kurtosis.

Measurement Model Testing

Prior to testing the structural hypothesized model, a single confirmatory factor analysis (CFA [Mueller & Hancock, 2008]) was conducted including both latent variables to evaluate the measurement properties of the model. Two latent factors were modeled including (1) new information (measured by resource activation, clarification, and mastery) and (2) trauma-related psychopathology (measured by depression, anxiety, stress, and PTSD). The measurement model demonstrated excellent fit: $\chi^2(13) = 37.507$, $p < .001$, CFI = .98, TLI = .97, SRMR = .06, RMSEA = .09.

Structural Model Testing – Hypothesized Model

The hypothesized structural model tested the relationships between fear activation and the two latent variables: incorporation of new information and trauma-related psychopathology. Model fit was evaluated using the criteria for good model fit outlined above and indicated poor fit to the data, $\chi^2(19) = 145.818$, $p < .001$, CFI = .91, TLI = .86, SRMR = .13, RMSEA = .17. Modification indices were examined, revealing one theoretically defensible modification: correlating the error terms between the problem actuation and resource activation, as both measures shared the same measurement method within this study. Following this modification, the structural model exhibited a significant improvement to the fit of the data, $\Delta\chi^2(1) =$

58.894, $p < .001$, and the Bayesian Information Criterion (BIC) value was lower than the original model, BIC = 238.27, in the modified model, BIC = 184.91. The modified hypothesized model yielded the following fit indices: $\chi^2(18) = 86.924$, $p < .001$, CFI = .92, TLI = .95, SRMR = .12, RMSEA = .13. According to the criteria outlined above, CFI and TLI met acceptable thresholds, whereas SRMR and RMSEA exceeded conventional cutoffs, indicating less than adequate model fit.

Thus, modification indices of the modified model were examined which revealed an additional theoretically sound modification: adding a covariance between the error terms of problem actuation and PTSD symptoms as both measures asked a similar nature of questions (e.g., "I relived painful or fearful memories" [Problem Actuation]; "Repeated, disturbing, and unwanted memories of the stressful experience?" [PTSD symptoms]). Following this modification, the measurement model exhibited a significant improvement to the fit of the data, $\Delta\chi^2(1) = 27.186$, $p < .001$, with BIC value lowering to 163.06. Additionally, the modification to the hypothesized modified model demonstrated good fit to the a priori indices values, $\chi^2(17) = 59.738$, $p < .001$, CFI = .97, TLI = .95, SRMR = .10, RMSEA = .10.

The latent construct new information demonstrated strong standardized loadings across its three indicators: resource activation, $\beta = .80$, $p < .001$, clarification, $\beta = .92$, $p < .001$, and mastery, $\beta = .91$, $p < .001$. Sixty-four percent of the variance in resource activation, 85% of the variance in clarification, and 83% of the variance in mastery was explained by this modified model. The latent construct trauma-related psychopathology also demonstrated good fit, with standardized loadings of $\beta = .81$ for PTSD, $p < .001$, $\beta = .88$ for depression, $p < .001$, and $\beta = .91$ for both anxiety, $p < .001$, and stress, $p < .001$. Seventy-seven percent of variance in depression,

83% of the variance in anxiety, 82% of the variance in stress, and 69% of the variance in PTSD were explained by this modified hypothesized model.

Consistent with hypothesis 1a, higher fear activation, as measured via problem actuation, led to the increased incorporation of new information, $\beta = .36$, $p < .001$. Further, consistent with hypothesis 1b, higher incorporation of new information led to a modification in behavior, as measured via less reported trauma-related psychopathology, $\beta = .17$, $p = .006$. Additionally, the correlated error terms were significant between problem actuation and resource activation, $\beta = -.49$, $p < .001$, and between problem actuation and PTSD symptoms, $\beta = .34$, $p < .001$. Notably, the correlation between the residuals of problem actuation and resource activation was negative, indicating that unexplained variance in these two variables moved in opposite directions.

Finally, the covariate of time since sexual assault was significantly negatively associated with the latent variable trauma-related psychopathology, $\beta = -.13$, $p = .03$, indicating that individuals with more time elapsed since they were assaulted tended to report lower levels of trauma-related symptoms overall. Sexual assault severity was significantly positively associated with trauma-related psychopathology, $\beta = .39$; $p < .001$. This suggests that those with more sexual assault severity reported greater trauma-related psychopathology. However, the inclusion of these covariates and the primary structural paths among problem actuation, incorporation of new information, and trauma-related psychopathology were significant even when accounting for these variables, suggesting that these relationships exist even when accounting for the impacts of time since sexual assault and sexual assault severity on trauma-related psychopathology.

Structural Model Testing – Alternative Model

The alternative structural model (Figure 3) was tested using SEM, in which problem actuation, clarification, resource activation, and mastery were modeled as separate, by covarying, predictors of the latent variable trauma-related psychopathology (measured by depression, anxiety, stress, and PTSD symptoms). The measurement model demonstrated good fit to the data, $\chi^2(15) = 47.082$, $p < .001$, CFI = .98, TLI = .96, SRMR = .04, RMSEA = .10, according to the *a priori* fit criteria. The measurement model demonstrated strong standardized loadings for all four observed indicators. Specifically, depression, $\beta = .87$; $p < .001$, anxiety, $\beta = .92$; $p < .001$, stress, $\beta = .90$; $p < .001$, and PTSD symptoms, $\beta = .86$; $p < .001$, each loaded significantly on the latent construct. In this model, 76% of the variance in depression, 84% in anxiety, 81% in stress, and 73% in PTSD symptoms were explained by the latent construct trauma-related psychopathology. Thus, the model explained substantial variance in each indicator (see Table 4).

Consistent with the alternative model's hypotheses (2a, 2b, 2d), greater self-reported problem actuation, $\beta = .42$, $p < .001$, clarification, $\beta = .21$, $p = .002$, and mastery, $\beta = .17$, $p = .011$, were associated with lower reported trauma-related psychopathology. However, in consistent with hypothesis 2c, resource activation was not a significantly associated with, trauma-related psychopathology, $\beta = -.04$, $p = .599$. These standardized regression paths are presented in Table 6.

In addition, in partial support of hypothesis 2e, significant covariances were identified among some of the observed variables (see Table 5). Problem actuation was positively associated with clarification, $\beta = .40$, $p < .001$, and mastery, $\beta = .31$, $p < .001$. Clarification was positively associated with resource activation, $\beta = .58$, $p < .001$, and mastery, $\beta = .83$, $p < .001$, and resource activation was positively associated with mastery, $\beta = .64$, $p < .001$. However, the

hypothesized relationship between problem actuation and resource activation was not supported, β = -.05, p = .424.

Finally, time since sexual assault and sexual assault severity were added as covariates predicting the latent variable trauma-related psychopathology. Time since sexual assault and severity of sexual assault remained significantly associated in the same directions with the latent variable trauma-related psychopathology, β = -.15, p = .02; β = .41; p < .001, respectively.

Model Comparison and Selection

To determine the superior model, both the hypothesized model and the alternative model were evaluated using the *a priori* model fit indices. Although the alternative model demonstrated slightly better absolute fit indices (CFI, TLI, SRMR), the hypothesized model yielded a lower BIC (163.06 vs. 166.59), indicating better relative fit when accounting for model complexity and parsimony. In line with best practices, BIC is often prioritized for comparing non-nested SEMs (Kline, 2016), as it balances fit and complexity. Although the hypothesized model yielded a lower BIC relative to the alternative model (ΔBIC = 3.53), this difference falls within the range characterized as *positive*—but not *strong*—evidence favoring one model over another, as differences of 2 to 6 indicate positive evidence, 6 to 10 indicate strong evidence, and values greater than 10 indicate very strong evidence (Kass & Raftery, 1995). Accordingly, within the current study, the lower BIC for the hypothesized model provides modest support for its relative fit when accounting for model complexity. This statistical consideration, in conjunction with theoretical alignment with EPT, informed the decision to retain the hypothesized model for interpretation. Summary of goodness-of-fit statistics for competing models can be found in Table 2.

Post Hoc Analyses

A one-way analysis of variance (ANOVA) was conducted to examine differences in fear activation (e.g., problem actuation) across psychedelic dosage groups (low, moderate, moderately high, high). Results indicated a significant effect of dosage on problem actuation, $F(3, 226) = 3.99$, $p = .009$, $\eta^2 = .05$. Post hoc Tukey HSD comparisons were conducted to further examine the group differences of psychedelic dosage. Results of the post hoc analyses revealed that participants reporting low doses had significantly lower problem actuation scores than those reporting moderately high ($p = .038$) and high doses ($p = .013$). No significant differences were observed between low and moderate doses ($p = .266$) or among moderate, moderately high, and high dose groups ($\underline{p} \geq .136$). Within the current sample, individuals who reported moderately high and high doses of psychedelics demonstrated significantly greater problem actuation compared to those reporting low doses.

Chapter V

Discussion

This purpose of the present study was to examine how emotional processing theory (EPT), the leading framework underlying evidence-based trauma treatments (Foa & Kozak, 1986; Foa et al., 2009), can be applied to understand the therapeutic potential of naturalistic classic psychedelic use among individuals who have survived an experience of sexual assault. Guided by EPT (Foa & Kozak, 1986) and the General Change Mechanisms (GCM; Grawe, 1997) theory, two structural equation models (SEM) were tested to examine how therapeutic processes related to trauma-related psychopathology (i.e., depression, anxiety, stress, and PTSD symptoms).

The hypothesized model, which reflected the sequential nature of the EPT framework (Foa & Kozak, 1986), demonstrated superior fit compared to the alternative model, which specified that each therapeutic process independently related to trauma-related psychopathology; however, the BIC difference between models fell within the range of positive—but not strong—evidence, suggesting modest support for the hypothesized model. Results supported both hypothesized pathways within the model. Specifically, higher fear activation, as measured via problem actuation, was associated with greater incorporation of new information (i.e., resource activation, clarification, and mastery), and greater incorporation of new information was, in turn, associated with less reported trauma-related psychopathology (i.e., depression, anxiety, stress, and PTSD symptoms). These findings suggest that psychedelic experiences, even in naturalistic settings, may provide a context in which survivors can engage with these therapeutic mechanisms, which may contribute to reductions in depression, anxiety, stress, and PTSD symptoms.

Overall, these findings provide preliminary evidence that naturalistic psychedelic use may facilitate therapeutic processes that are similar to EPT, particularly for survivors of sexual assault. Although caution is warranted given the cross-sectional design and reliance on retrospective self-report, the results underscore the potential value of psychedelics as a context in which survivors may engage in processes that influence trauma-related psychopathology following an experience of sexual assault. These findings contribute to the growing body of literature on psychedelic-assisted healing (Anderson et al., 2021; Reiff et al., 2020; Rose, 2024) and highlight the need for further empirical research that more directly evaluates the mechanisms of change in both naturalistic and clinical settings.

The following discussion interprets these findings in the context of existing theory and research. Each hypothesis will be examined in relation to EPT and relevant psychedelic literature. The broader implications for trauma treatment, theory development, and integration practices will be considered. Finally, limitations, future directions, and clinical implications will be discussed.

Fear Activation and Incorporation of New Information

Consistent with hypothesis 1a, greater fear activation as measured via problem actuation was associated with greater incorporation of new information—specifically resource activation, clarification, and mastery. Within the framework of EPT (Foa & Kozak, 1986), this finding suggests that the initial activation of trauma-related emotions and fear structures may be an essential precursor to the integration of new information, which may ultimately result in behavior change/modification, including symptom reduction. EPT posits that recovery from trauma requires sufficient engagement with the fear memory to allow emotional processing to occur (Foa & Kozak, 1986). Similarly, Grawe's (1997) GCM model identifies 'problem actuation' as a

necessary condition for the activation of internal resources and the restructuring of maladaptive schemas.

In the current sample, the naturalistic psychedelic experiences of participants may have facilitated emotional and cognitive engagement with the trauma memory, providing an avenue for activation of the fear structure (e.g., problem actuation) outside of traditional therapy. It is possible that survivors who are able to fully engage with their trauma during their psychedelic experience may demonstrate a greater capacity to process and incorporate new information, suggesting that psychedelics may act as a catalyst for activating fear structures in a way that supports emotional processing. This suggests that fear activation during psychedelic experiences may serve a function analogous to emotional engagement in exposure-based therapies.

Interestingly, individuals who reported moderately high and high doses of psychedelics demonstrated significantly greater problem actuation compared to those reporting lower doses. Although causality cannot be inferred, this pattern is theoretically consistent with EPT's emphasis on fear structure activation (i.e., problem actuation) as a necessary condition for emotional processing (Foa & Kozak, 1986). Higher psychedelic doses may intensify emotional, cognitive, and autobiographical material, thereby increasing activation of trauma-related fear networks. In this framework, greater problem actuation may reflect engagement with previously avoided traumatic memories, beliefs, and affective states.

This aligns with research suggesting that acute challenging experiences under psychedelics—often characterized by fear, grief, or ego dissolution—can, in some contexts, be associated with longer-term psychological benefit, particularly when individuals are able to engage with and integrate these experiences (Griffiths et al., 2006; Roseman et al., 2018). However, such experiences are not uniformly beneficial and may also involve significant

distress, including anxiety, dysphoria, or, in some cases, adverse reactions such as prolonged psychological destabilization or psychotic-like symptoms, particularly among individuals with pre-existing vulnerabilities (Rucker et al., 2018). A substantial body of work emphasizes the importance of 'set' (i.e., mindset, expectations) and 'setting' (i.e., environmental and social context), as well as preparation and integration support, in shaping whether these experiences are ultimately helpful or harmful (Watts et al., 2017). From an EPT perspective, challenging psychedelic experiences may reflect heightened emotional engagement wherein the fear structure becomes accessible for modification; however, without sufficient support or integration, such activation may not lead to adaptive updating. In contrast to avoidance, which maintains trauma symptoms, the capacity to engage with and process fear—within a supportive and structured context—may facilitate the incorporation of new, non-threatening information, consistent with mechanisms of change within EPT (Foa et al., 2006).

Clinically, this underscores the importance of set and setting—whether in naturalistic or clinical settings—that allow survivors to safely confront and engage with trauma-related, fear inducing, material. Participants who struggled to access trauma-related memories or emotions during their psychedelic experience may require supportive conditions during their psychedelic use to ensure that sufficient activation occurs to enable emotional processing as well as integration at follow up. Results from the structural model indicated that higher levels of problem actuation were associated with greater incorporation of new information, which in turn was related to lower trauma-related psychopathology, suggesting that problem actuation may represent an important process associated with therapeutic change among survivors of sexual assault.

Incorporation of New Information and Trauma-Related Psychopathology

Results also supported hypothesis 1b, indicating that higher incorporation of new information—operationalized through the therapeutic GCM processes of clarification, mastery, and resource activation—was associated with lower trauma-related psychopathology (i.e., depression, anxiety, stress, and PTSD). This finding aligns with the central tenet of EPT (Foa & Kozak, 1986), which posits that effective trauma recovery involves modifying maladaptive fear structures through the integration of new, corrective information. When trauma-related memories are reactivated in a safe context, individuals can form new associations that disconfirm previously held beliefs about danger, helplessness, or self-blame (Goldpaugh, 2021; Kline, 2018).

From an EPT perspective, the incorporation of new information reflects a pivotal moment in emotional processing where activation transitions into behavior modification (e.g., reduced trauma-related psychopathology symptoms). These integrated insights may influence both emotional responses and behavioral patterns, which are in turn may relate to lower rates of trauma-related psychopathology symptom. This highlights the interplay between experiential, cognitive, and emotional mechanisms in recovery, suggesting that for some survivors, naturalistic psychedelic experiences may provide a context in which they can engage with trauma-related material such as memories and associations.

In the context of naturalistic psychedelic use, the incorporation of new information may occur through experiences of emotional insight, change in perspective, or a sense of meaning-making (Watts et al., 2017; Davis et al., 2020). Many participants in qualitative studies describe psychedelic sessions as opportunities to reframe their trauma narratives, experience forgiveness or self-compassion, and access internal and external resources (Modlin et al., 2024; Renelli et al.,

2020). The present findings provide initial empirical support to these narratives by demonstrating that higher levels of these integrative processes correspond with lower levels of trauma-related psychopathology. In this sense, psychedelics may facilitate what Foa and Kozak (1986) described as "incorporation of corrective information" wherein the traumatic memory is updated with new emotional and cognitive content that is no longer threatening (p. 32).

In this context, clarification—as measured by items such as "I gained a new understanding of the difficulties in my life" and "I could see my problems in a new light"—may have reflected processes of reinterpreting the traumatic experience and developing insight into emotional and behavioral patterns. Similarly, resource activation (e.g., "I felt connected to things that give my life meaning") likely involved recognizing and drawing upon internal strengths or external supports that facilitated coping. Mastery (e.g., "I learned things that can help me handle different difficult situations") may have represented the application of these insights toward more adaptive behaviors and emotion regulation strategies. Rooted in the framework of EPT, these processes are proposed to collectively contribute to modifying the underlying fear structure which then relates to lower levels of trauma-related psychopathology, consistent with the associations identified within the current study. Importantly, trauma-related psychopathology was observed in self-report measures, reflecting survivors' own perceptions and underscoring the relevance of these processes to lived recovery.

These results suggest that therapeutic mechanisms identified in structured, evidenced-based psychotherapy interventions such as prolonged exposure (PE) and cognitive processing therapy (CPT) may generalize to less controlled, naturalistic settings when survivors engage in meaning-making and integration during and following their psychedelic use. This parallels findings from both psychedelic and psychotherapy process research indicating that insight,

emotional processing, and reconsolidation of autobiographical memory predict improvement among survivors of various forms of trauma (Carhart-Harris et al., 2018; Hayes et al., 2011).

Taken together, the results for hypotheses 1a and 1b provide initial, correlational support for the theory that the incorporation of new information following sufficient fear activation during psychedelic experiences may result in a reduction in trauma-related psychopathology among survivors of sexual violence. This suggests that naturalistic psychedelic use may provide a unique context for engaging similar emotional processing mechanisms of change identified in evidence-based trauma treatments (e.g., PE, CPT) (Foa et al., 2009), thereby reinforcing the conceptual overlap between best practices in trauma treatment and emerging research on psychedelics and their potential for healing.

Covariates

Time Since Sexual Assault. The length of time elapsed since the sexual assault was negatively associated with trauma-related psychopathology, such that survivors with more time since their assault reported fewer symptoms of depression, anxiety, stress, and PTSD. This finding aligns with prior longitudinal and cross-sectional research demonstrating that trauma symptoms generally attenuate over time for many survivors (e.g., Andrews et al., 2000; O'Donnell et al., 2007), particularly when opportunities for meaning-making, coping, and social support are present. This may reflect gradual emotional integration and reduced reactivity to trauma cues as emotional and behavioral modification occurs naturally over time (Foa & Kozak, 1986). Importantly, the primary associations observed in this study remained significant even after accounting for time since assault, indicating that the relationships between the GCM mechanisms (e.g., problem actuation, clarification, resource activation, and mastery) and trauma-related psychopathology cannot be solely explained by natural symptom reduction over time.

This suggests that the relationships observed among the study variables were maintained after accounting for time since trauma, indicating that the identified therapeutic processes may contribute uniquely to trauma-related outcomes.

Severity of Sexual Assault. Conversely, trauma severity demonstrated a positive association with trauma-related psychopathology, consistent with prior research indicating that greater trauma exposure and severity predict heightened and more persistent symptoms (Briere & Elliott, 2003; Kilpatrick et al., 2017). Importantly, the primary associations in the current study were significant even after accounting for trauma severity, suggesting that the observed relationships between the GCM mechanisms and trauma-related psychopathology are not solely attributable to differences in trauma exposure or severity. This finding reinforces that while trauma severity contributes meaningfully to symptom burden, the therapeutic mechanisms engaged during naturalistic psychedelic experiences appear to have unique associations beyond the influence of trauma severity alone.

In summary, both covariates demonstrated significant independent associations with trauma-related psychopathology in the expected directions, such that greater severity was associated with higher levels of psychopathology, and greater time elapsed since the assault was associated with lower levels of psychopathology. Importantly, however, the existence of significant relationships among the core study variables and trauma-related psychopathology when these covariates were included in the model suggests that these relationships were not solely attributable to temporal distance from the trauma or assault severity.

Limitations

A limitation to this study is the cross-sectional nature of the data. Cross-sectional data is useful for understanding relationships between variables at a particular moment in time, but it

cannot be used to establish temporal sequences or causal directions. Therefore, it is impossible to definitively interpret any relationships that have been shown between psychedelic use and trauma-related psychopathology as causative, and the results should instead be viewed as suggestive rather than conclusive.

Using retrospective data is an additional limitation such that participants were asked to recall past incidents of their psychedelic use and how it relates to their sexual trauma. This may be biased due to recall bias or the repression of painful memories. This threat to the construct validity, known as reactivity to emotional situations, can have an impact on the dependability and accuracy of the current study's results (Heppner et al., 2017). Additionally, because this study examines non-clinical psychedelic use, rather than use under controlled conditions, the findings represent outcomes specific to psychedelic use through participant-chosen set and settings. Several confounding variables unique to the concepts of set and setting may be at play and could have an impact on our findings. The instrumentation and eligibility criteria throughout the study aimed to reduce, although could not eliminate, the impact of potential confounding factors.

Another limitation to this research is the method for recruitment. The online platform used to recruit participants may not adequately represent all survivors of sexual assault or individuals who have taken psychedelics. Therefore, the results are restricted in their generalizability. Because the study depends on participants self-reporting their experiences, people with strong opinions about the constructs being measured (i.e., psychedelics, trauma) or a history of extreme encounters may have been drawn to it. This might result in a skewed sample that is not representative of all survivors of sexual assault who have taken psychedelics. This

threatens the internal validity of the study and highlights the importance of future research including a wider sample of participants (Heppner et al., 2017).

Finally, the study did not include a comparison group of survivors of sexual assault who had not engaged in psychedelic use. As such, it was not possible to determine whether similar patterns of fear activation, incorporation of new information, and associations with trauma-related psychopathology would have emerged in survivors who did not use psychedelics. Although higher psychedelic doses were associated with greater problem actuation within the present sample, the absence of a non-psychedelic comparison group limits conclusions regarding the specificity of these findings. Future research incorporating comparison groups would strengthen inferences regarding specificity and enhance the interpretability of the proposed model.

Implications

These results emphasize several important implications for theory, research, and clinical practice. Taken together, the findings provide initial, correlational support for a sequential model grounded in EPT in which fear activation initiates the incorporation of new information during psychedelic use in naturalistic settings and subsequent reductions in trauma-related psychopathology among sexual assault. From a theoretical standpoint, the findings extend EPT to a novel context, demonstrating that the sequential mechanisms of fear activation, incorporation of new information, and behavioral modification may be relevant not only in traditional therapy settings but also in naturalistic psychedelic experiences. This suggests that EPT's framework may account for a broader range of trauma recovery processes, including culturally responsive and self-directed naturalistic modalities.

Clinically, these results highlight the potential of psychedelics as a therapeutic adjunct or alternative to conventional trauma-focused interventions (e.g., PE, CPT). Practitioners working with survivors who voluntarily report prior naturalistic psychedelic use may consider exploring such past experiences in therapy—for instance, discussing themes of insight, emotional release, or reconnection that emerged during the experience—and integrating these into ongoing treatment goals. Such integration may be particularly valuable in contexts where traditional therapies have difficulty activating or modifying the fear structure (e.g., when avoidance limits engagement with traumatic material).

The results also carry broader societal and policy implications. Beginning to expand the evidence base for naturalistic or guided psychedelic-assisted approaches may inform public health strategies, harm reduction policies, and clinical training initiatives aimed at supporting survivors of sexual assault. As interest in psychedelic-assisted therapy continues to grow, these findings suggest that safe, intentional, and informed use—whether in clinical or naturalistic contexts—could be a valuable addition to trauma recovery frameworks. Finally, future research and clinical practice should continue to prioritize inclusive, evidence-based strategies that respect autonomy, lived experience, and cultural diversity in trauma recovery.

Future Directions

The findings of the current study highlight several avenues for future research on the application of EPT (Foa & Kozak, 1986) to psychedelic use, specifically among survivors of sexual assault as well as more broadly across other populations and contexts. First, while this study relied on self-reported measures of trauma-related psychopathology, future work could incorporate multimodal assessment strategies, including clinician-administered diagnostic interviews, physiological markers of stress or emotional activation, and behavioral indicators of

coping (e.g., mastery). Such approaches would allow for a more nuanced understanding of how the key EPT processes manifest across different domains—for example, how fear activation might correspond with physiological arousal (e.g., heart rate variability), how information incorporation could be reflected in cognitive reappraisal or meaning-making during interviews, and how behavioral change might be observed through improved daily functioning or reduced avoidance behaviors.

Future research would benefit from incorporating comparison group designs to further evaluate the applicability of EPT within psychedelic contexts. For example, studies could compare survivors of sexual assault who engage in naturalistic psychedelic use with those receiving established trauma-focused treatments such as PE or CPT. Such comparisons would allow researchers to examine whether similar mechanisms of fear activation, incorporation of new information, and behavioral modification are observed across modalities. A comparison design would also help clarify similarities and differences in process pathways, strengthen inferences regarding directionality, and situate psychedelic experiences more clearly within the EPT framework.

While exploring naturalistic psychedelic use is valuable, it cannot account for variability in substance type, dosage, context, and support. Future research could examine controlled or guided psychedelic experiences, exploring how variables such as set and setting, preparation, and integration impact the mechanisms outlined in EPT. Exploring psychedelics in such settings could help more clearly determine causality and directionality of effects while also reducing threats to internal validity inherent in self-reported, naturalistic designs. Randomized controlled trials could determine whether structured facilitation enhances the therapeutic processes of

activating the fear structure and incorporating new information more robustly than naturalistic use.

This study highlights the need to investigate longitudinal outcomes. Future research could examine whether reductions in trauma-related psychopathology are maintained over time and whether repeated or ongoing psychedelic experiences further enhance the incorporation of corrective information and sustained behavioral change. Long-term studies would also clarify potential moderators and mediators of treatment outcomes, including baseline symptom severity, comorbid conditions, and prior therapy experience.

Future research should more directly examine the role of race, ethnicity, and cultural context in shaping trauma recovery and psychedelic experiences. Racial and ethnic identity variables were not examined as covariates or moderators in the present models due to sample size constraints and limited statistical power to detect group differences. Subsequent studies with larger and more diverse samples could examine whether the relationships among fear activation, incorporation of new information, and trauma-related psychopathology differ across cultural groups, particularly in relation to varying norms, beliefs, and practices surrounding psychedelic use. This is especially relevant in the context of the current study, which relied on a naturalistic sample without controlling for cultural background or setting of use, as cross-cultural differences in stigma surrounding sexual assault disclosure and help-seeking behaviors (e.g., Koss et al., 2007; Campbell et al., 2009) as well as differing perceptions of psychedelic or alternative healing practices may meaningfully influence both emotional processing and perceived outcomes. Moreover, as international discussions continue regarding the integration of psychedelic approaches within diverse medical and cultural systems (e.g., Pace & Devont; 2021), culturally

responsive and cross-national research will be essential to clarify how these processes operate across contexts.

Finally, incorporating qualitative and quantitative approaches could deepen the understanding of the lived experiences of sexual assault survivors who have used psychedelics in naturalistic settings. Incorporating interviews or narrative analyses alongside quantitative methods would provide richer insight into survivors' processes—areas not fully captured by self-report measures. While qualitative studies of psychedelic experiences exist, few have specifically examined these processes through the lens of trauma recovery or within the framework of EPT. Future mixed-methods research could clarify how survivors describe and interpret fear activation, resource activation, and mastery in their own words, offering a more nuanced understanding. Overall, future research should aim to refine and extend the EPT framework within the context of psychedelic-assisted trauma recovery, ultimately informing evidence-based, culturally responsive, and accessible healing for survivors of sexual assault.

Conclusions

This study applied EPT (Foa & Kozak, 1986) to examine mechanisms of change associated with naturalistic psychedelic use among adult survivors of sexual assault. Using the GCM (Grawe, 1997) framework, the hypothesized EPT-informed model demonstrated superior fit compared to an alternative model. This outcome supports the sequential process whereby higher fear activation (problem actuation) was related to increased incorporation of new information (clarification, resource activation, and mastery), which in turn related to lower levels of trauma-related psychopathology (depression, anxiety, stress, and PTSD).

Findings provide preliminary evidence that processes central to evidence-based trauma treatment (e.g., fear activation, new information, behavioral modification) may also relate to

change within naturalistic psychedelic experiences. Importantly, these relationships remained significant when accounting for time since assault and severity of trauma, underscoring the robustness of these associations. While causality cannot be inferred from this naturalistic design, the study contributes to an emerging dialogue on how established therapeutic mechanisms may manifest outside structured clinical settings. Future research using controlled, multimodal, and longitudinal methods is needed to clarify the temporal dynamics and boundary conditions of these processes. Overall, this work extends EPT into the novel area of psychedelics, offering a possible connection between established trauma recovery frameworks and emerging psychedelic science. The findings invite further inquiry into how psychedelic experiences may, under certain conditions, engage processes of emotional processing and integration among survivors of sexual assault seeking recovery.

References

Aday, J. S., Carhart-Harris, R. L., & Woolley, J. D. (2023). Emerging challenges for psychedelic therapy. *JAMA Psychiatry*, *80*(6), 533. https://doi.org/10.1001/jamapsychiatry.2023.0549

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR*.

Andersen, K. A. A., Carhart-Harris, R., Nutt, D. J., & Erritzoe, D. (2021). Therapeutic effects of classic serotonergic psychedelics: A systematic review of modern-era clinical studies. *Acta Psychiatrica Scandinavica*, *143*(2), 101–118. https://doi.org/10.1111/acps.13249

Angelou, M. (2008). Violence. In *Letter to my daughter* (pp. 45-54). Hachette UK.

Arbuckle, J. L. (2022). *IBM SPSS Amos 29 User's Guide*. SPSS, Inc. https://www.ibm.com/docs/en/SSLVMB_29.0.0/pdf/IBM_SPSS_Amos_User_Guide.pdf

Alpert, E., Hayes, A. M., & Foa, E. B. (2023). Examining emotional processing theory and predictors of outcome in prolonged exposure for PTSD. *Behaviour Research and Therapy*, *167*, 104341. https://doi.org/10.1016/j.brat.2023.104341

Alpert, E., Hayes, A. M., Yasinski, C., Webb, C., & Deblinger, E. (2021). Processes of change in trauma-focused cognitive behavioral therapy for youths: An approach informed by emotional processing theory. *Clinical Psychological Science*, *9*(2), 270–283. https://doi.org/10.1177/2167702620957315

Baker, R., Thomas, S., Thomas, P. W., Gower, P., Santonastaso, M., & Whittlesea, A. (2010). The emotional processing scale: Scale refinement and abridgement (EPS-25). *Journal of Psychosomatic Research*, *68*(1), 83-88. https://doi.org/10.1016/j.jpsychores.2009.07.007

Baraldi, A. N., & Enders, C. K. (2010). An introduction to modern missing data analyses. *Journal of School Psychology*, *48*(1), 5-37. https://doi.org/10.1016/j.jsp.2009.10.001

Barksdale, B. R., Doss, M. K., Fonzo, G. A., & Nemeroff, C. B. (2024). The mechanistic divide in psychedelic neuroscience: An unbridgeable gap? *Neurotherapeutics*, e00322. https://doi.org/10.1016/j.neurot.2024.e00322

Barone, W., Beck, J., Mitsunaga-Whitten, M., & Perl, P. (2019). Perceived benefits of MDMA-assisted psychotherapy beyond symptom reduction: Qualitative follow-up study of a clinical trial for individuals with treatment-resistant PTSD. *Journal of Psychoactive Drugs*, *51*(2), 199–208. https://doi.org/10.1080/02791072.2019.1580805

Barrett, F. S., Bradstreet, M. P., Leoutsakos, J. S., Johnson, M. W., & Griffiths, R. R. (2016). The challenging experience questionnaire: Characterization of challenging experiences with psilocybin mushrooms. *Journal of Psychopharmacology*, *30*(12), 1279-1295. https://doi.org/10.1177/0269881116678781

Barrett, F. S., Doss, M. K., Sepeda, N. D., Pekar, J. J., & Griffiths, R. R. (2020). Emotions and brain function are altered up to one month after a single high dose of psilocybin. *Scientific Reports*, *10*(1). https://doi.org/10.1038/s41598-020-59282-y

Barrett, F. S., Johnson, M. W., & Griffiths, R. R. (2015). Validation of the revised mystical experience questionnaire in experimental sessions with psilocybin. *Journal of Psychopharmacology*, *29*(11), 1182-1190. https://doi.org/10.1177/0269881115609019

Barrett, F. S., Johnson, M. W., & Griffiths, R. R. (2017). Neuroticism is associated with challenging experiences with psilocybin mushrooms. *Personality and Individual Differences*, *117*, 155-160. https://doi.org/10.1016/j.paid.2017.06.004

Belleville, G., Dubé-Frenette, M., & Rousseau, A. (2018). Efficacy of imagery rehearsal therapy

and cognitive behavioral therapy in sexual assault victims with posttraumatic stress disorder: A randomized controlled trial. *Journal of Traumatic Stress*, *31*(4), 591–601. https://doi-org.byu.idm. oclc.org/10.1002/jts.22306

Bicanic, I., De Roos, C., Van Wesel, F., Sinnema, G., & Van De Putte, E. (2014). Rape-related symptoms in adolescents: Short- and long-term outcome after cognitive behavior group therapy. *European Journal of Psychotraumatology*, *5*(1), 1–8. https://doi-org.byu.idm.oclc.org/10.3402/ejpt. v5.22969

Bird, C. I., Modlin, N. L., & Rucker, J. J. (2021). Psilocybin and MDMA for the treatment of trauma-related psychopathology. *International Review of Psychiatry*, *33*(3), 229-249. https://doi.org/10.1080/09540261.2021.1919062

Bouso, J. C., Doblin, R., Farré, M., Alcázar, M. Á., & Gómez-Jarabo, G. (2008). MDMA-assisted psychotherapy using low doses in a small sample of women with chronic posttraumatic stress disorder. *Journal of Psychoactive Drugs*, *40*(3), 225-236. https://doi.org/10.1080/02791072.2008.10400637

Bouso, J. C., Palhano-Fontes, F., Rodríguez-Fornells, A., Ribeiro, S., Sanches, R., Crippa, J. A., Hallak, J. E., De Araujo, D. B., & Riba, J. (2015). Long-term use of psychedelic drugs is associated with differences in brain structure and personality in humans. *European Neuropsychopharmacology*, *25*(4), 483-492. https://doi.org/10.1016/j.euroneuro.2015.01.008

Borumandnia, N., Khadembashi, N., Tabatabaei, M., & Alavi Majd, H. (2020). The prevalence rate of sexual violence worldwide: A trend analysis. *BMC Public Health*, *20*(1), Article 1835. https://doi-org.byu.idm.oclc.org/10.1186/ s12889-020-09926-5

Breeksema, J. J., Niemeijer, A. R., Krediet, E., Vermetten, E., & Schoevers, R. A. (2020).

Psychedelic treatments for psychiatric disorders: A systematic review and thematic synthesis of patient experiences in qualitative studies. *CNS Drugs*, *34*(9), 925-946. https://doi.org/10.1007/s40263-020-00748-y

Brewin, C. R., & Holmes, E. A. (2003). Psychological theories of posttraumatic stress disorder. *Clinical Psychology Review*, *23*(3), 339-376. https://doi.org/10.1016/s0272-7358(03)00033-3

Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 132-162). Beverly Hills, CA: Sage.

Burt, M. R. (1980). Cultural myths and supports for rape. *Journal of Personality and Social Psychology*, *38*(2), 217-230. https://doi.org/10.1037/0022-3514.38.2.217

Campbell, R., Dworkin, E., & Cabral, G. (2009). An ecological model of the impact of sexual assault on women's mental health. *Trauma, Violence, & Abuse*, *10*(3), 225-246. https://doi.org/10.1177/1524838009334456

Carhart-Harris, R. L., & Friston, K. J. (2019). REBUS and the anarchic brain: Toward a unified model of the brain action of psychedelics. *Pharmacological Reviews*, *71*(3), 316-344. https://doi.org/10.1124/pr.118.017160

Carhart-Harris, R. L., Leech, R., Hellyer, P. J., Shanahan, M., Feilding, A., Tagliazucchi, E., Chialvo, D. R., & Nutt, D. (2014). The entropic brain: A theory of conscious states informed by neuroimaging research with psychedelic drugs. *Frontiers in Human Neuroscience*, *8*. https://doi.org/10.3389/fnhum.2014.00020

Carhart-Harris, R., & Nutt, D. (2017). Serotonin and brain function: A tale of two receptors.

Journal of Psychopharmacology, *31*(9), 1091–1120. https://doi.org/10.1177/0269881117725915

Celidwen, Y., Redvers, N., Githaiga, C., Calambás, J., Añaños, K., Chindoy, M. E., Vitale, R., Rojas, J. N., Mondragón, D., Rosalío, Y. V., & Sacbajá, A. (2023). Ethical principles of traditional Indigenous medicine to guide western psychedelic research and practice. *The Lancet Regional Health - Americas*, *18*, 100410. https://doi.org/10.1016/j.lana.2022.100410

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, *9*, 233-255.

Chrousos, G. (2009). Stress and disorders of the stress system. *Nature Reviews Endocrinology*, *5*, 374–381. https://doi.org/10.1038/nrendo.2009.106

Choudhary, E., Smith, M., & Bossarte, R. M. (2012). Depression, anxiety, and symptom profiles among female and male victims of sexual violence. *American Journal of Men's Health*, *6*(1), 28–36. https://doi.org/10.1177/1557988311414045

Cook, J. M., Pilver, C., Dinnen, S., Schnurr, P. P., & Hoff, R. (2013). Prevalence of physical and sexual assault and mental health disorders in older women: Findings from a nationally representative sample. *American Journal of Geriatric Psychiatry*, *21*(9), 877–886. https://doi.org/10.1016/j.jagp.2013.01.016

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, *1*, 16-29. doi: 10.1037/1082-989X.1.1.16

Curtis, R., Roberts, L., Graves, E., Rainey, H. T., Wynn, D., Krantz, D., & Wieloch, V. (2020).

The role of psychedelics and counseling in mental health treatment. *Journal of Mental Health Counseling*, *42*(4), 323–338. https://doi.org/10.17744/mehc.42.4.03

Davis, A. K., Averill, L. A., Sepeda, N. D., Barsuglia, J. P., & Amoroso, T. (2020). Psychedelic treatment for trauma-related psychological and cognitive impairment among US special operations forces veterans. *Chronic Stress*, *4*, 247054702093956. https://doi.org/10.1177/2470547020939564

Davis, A. K., Barrett, F. S., So, S., Gukasyan, N., Swift, T. C., & Griffiths, R. R. (2021). Development of the psychological insight questionnaire among a sample of people who have consumed psilocybin or LSD. *Journal of Psychopharmacology*, *35*(4), 437-446. https://doi.org/10.1177/0269881120967878

De Jongh, A., Amann, B. L., Hofmann, A., Farrell, D., & Lee, C. W. (2019). The status of EMDR therapy in the treatment of posttraumatic stress disorder 30 years after its introduction. *Journal of EMDR Practice and Research*, *13*(4), 261-269. https://doi.org/10.1891/1933-3196.13.4.261

DiMauro, J., & Renshaw, K. D. (2019). PTSD and relationship satisfaction in female survivors of sexual assault. *Psychological Trauma: Theory, Research, Practice, and Policy*, *11*(5), 534-541. https://doi.org/10.1037/tra0000391

Doblin, R. E., Christiansen, M., Jerome, L., & Burge, B. (2019). The past and future of psychedelic science: An introduction to this issue. *Journal of Psychoactive Drugs*, *51*(2), 93–97. https://doi.org/10.1080/02791072.2019.1606472

Dodeen, H. (2003). Effectiveness of valid mean substitution in treating missing data in attitude assessment. *Assessment & Evaluation in Higher Education, 28*(5), 505-513. https://doi.org/10.1080/02602930301674

Dolder, P., Schmid, Y., Mueller, F., Borgwardt, S., & Liechti, M. (2016). LSD acutely impairs fear recognition and enhances emotional empathy and sociality. *European Neuropsychopharmacology*, *26*, S261. https://doi.org/10.1016/s0924-977x(16)31139-7

Dworkin, E. R. (2020). Risk for mental disorders associated with sexual assault: A meta-analysis. *Trauma, Violence, & Abuse*, *21*(5), 1011–1028. https://doi.org/10.1177/1524838018813198

Dworkin, E. R., & Weaver, T. L. (2021). The impact of sociocultural contexts on mental health following sexual violence: A conceptual model. *Psychology of Violence*, *11*(5), 476-487. https://doi.org/10.1037/vio0000350

Dunbar-Ortiz, R. (2023). *An Indigenous Peoples' history of the United States (10th anniversary edition)*. Beacon Press.

Ehring, T., Welboren, R., Morina, N., Wicherts, J. M., Freitag, J., & Emmelkamp, P. M. (2014). Meta-analysis of psychological treatments for posttraumatic stress disorder in adult survivors of childhood abuse. *Clinical Psychology Review*, *34*(8), 645-657. https://doi.org/10.1016/j.cpr.2014.10.004

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling, 8*(3), 430-457. https://doi.org/10.1207/S15328007SEM0803_5

Foa, E. B., & Hearst-Ikeda, D. (1996). Emotional dissociation in response to trauma. In L. K. Michelson & W. J. Ray (Eds.), *Handbook of Dissociation* (pp. 207–224). Springer US. https://doi.org/10.1007/978-1-4899-0310-5_10

Foa, E. B., Hembree, E. A., Cahill, S. P., Rauch, S. A., Riggs, D. S., Feeny, N. C., & Yadin, E.

(2005). Randomized trial of prolonged exposure for posttraumatic stress disorder with and without cognitive restructuring: Outcome at academic and community clinics. *Journal of Consulting and Clinical Psychology*, *73*(5), 953-964. https://doi.org/10.1037/0022-006x.73.5.953

Foa, E. B. (2011). Prolonged exposure therapy: Past, present, and future. *Depression and Anxiety, 28*(12), 1043-1047. https://doi.org10.1002/da.20907

Foa, E. B., Huppert, J. D., & Cahill, S. P. (2006). Emotional processing theory: An update. In *Pathological Anxiety: Emotional Processing in Etiology and Treatment* (pp. 3-24). Guilford Publications.

Foa, E. B., Keane, T. M., Friedman, M. J., & Cohen, J. A. (Eds.). (2009). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies* (2nd ed.). The Guilford Press.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, *99*(1), 20-35. https://doi.org/10.1037//0033-2909.99.1.20

Foa, E. B., & Kozak, M. J. (1998). Clinical applications of bioinformational theory: Understanding anxiety and its treatment. *Behavior Therapy*, *29*(4), 675–690. https://doi.org/10.1016/S00057894(98)80025-7

Foa, E. B., McLean, C. P., Capaldi, S., & Rosenfield, D. (2013). Prolonged exposure vs supportive counseling for sexual abuse–related PTSD in adolescent girls. *JAMA*, *310*(24), 2650. https://doi.org/10.1001/jama.2013.282829

Foa, E. B., & Rauch, S. A. (2004). Cognitive changes during prolonged exposure

versus prolonged exposure plus cognitive restructuring in female assault survivors with posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, *72*(5), 879-884. https://doi.org/10.1037/0022-006x.72.5.879

Foa, E. B., Riggs, D. S., Massie, E. D., & Yarczower, M. (1995). The impact of fear activation and anger on the efficacy of exposure treatment for posttraumatic stress disorder. *Behavior Therapy*, *26*(3), 487-499. https://doi.org/10.1016/s0005-7894(05)80096-6

Foa, E. B., Steketee, G., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualizations of post-traumatic stress disorder. *Behavior Therapy*, *20*(2), 155-176. https://doi.org/10.1016/s00057894(89)80067-x

Fortunato, J. J., Réus, G. Z., Kirsch, T. R., Stringari, R. B., Fries, G. R., Kapczinski, F., Hallak, J. E., Zuardi, A. W., Crippa, J. A., & Quevedo, J. (2010). Chronic administration of harmine elicits antidepressant-like effects and increases BDNF levels in rat hippocampus. *Journal of Neural Transmission*, *117*(10), 1131-1137. https://doi.org/10.1007/s00702-010-0451-2

Fortunato, J. J., Réus, G. Z., Kirsch, T. R., Stringari, R. B., Fries, G. R., Kapczinski, F., Hallak, J. E., Zuardi, A. W., Crippa, J. A., & Quevedo, J. (2010). Effects of β-carboline harmine on behavioral and physiological parameters observed in the chronic mild stress model: Further evidence of antidepressant properties. *Brain Research Bulletin*, *81*(4-5), 491-496. https://doi.org/10.1016/j.brainresbull.2009.09.008

Frazier, P., Tashiro, T., Berman, M., Steger, M., & Long, J. (2004). Correlates of levels and patterns of positive life changes following sexual assault. *Journal of Consulting and Clinical Psychology*, *72*(1), 19-30. https://doi.org/10.1037/0022-006x.72.1.19

Garcia, N. M., Eiff, A. C., Lopez-Esteban, A., & Zoellner, L. (2023). Cultural considerations for treating PTSD in Latinx sexual assault survivors with prolonged exposure. *Cognitive and Behavioral Practice*, *30*(2), 179-194. https://doi.org/10.1016/j.cbpra.2021.12.002

Gashi, L., Sandberg, S., & Pedersen, W. (2021). Making "bad trips" good: How users of psychedelics narratively transform challenging trips into valuable experiences. *International Journal of Drug Policy*, *87*, 102997. https://doi.org/10.1016/j.drugpo.2020.102997

Grant, D. M., Beck, J. G., Marques, L., Palyo, S. A., & Clapp, J. D. (2008). The structure of distress following trauma: Posttraumatic stress disorder, major depressive disorder, and generalized anxiety disorder. *Journal of Abnormal Psychology*, *117*(3), 662-672. https://doi.org/10.1037/a0012591

Graziosi, M., Rohde, J. S., Tiwari, P., Siev, J., & Yaden, D. B. (2024). Psychedelics, OCD and related disorders: A systematic review. *Journal of Obsessive-Compulsive and Related Disorders*, *41*, 100873. https://doi.org/10.1016/j.jocrd.2024.100873

Greenberg, L. S. (2004). Emotion-focused therapy. *Clinical Psychology & Psychotherapy*, *11*(1), 3-16. https://doi.org/10.1002/cpp.388

Griffiths, R., Richards, W., Johnson, M., McCann, U., & Jesse, R. (2008). Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *Journal of Psychopharmacology*, *22*(6), 621-632. https://doi.org/10.1177/0269881108094300

Grinspoon, L., & Doblin, R. (2001). Psychedelics as catalysts of insight-oriented psychotherapy. *Social Research*, *68*(3), 677-695. http://www.jstor.org/stable/40971906

Hall, K. A. A., Healy, E. T., & Galovski, T. E. (2019). The sequelae of sexual assault. In W.

O'Donohue & P. Schewe (Eds.), *Handbook of sexual assault and sexual assault prevention* (pp. 277–292). Springer.

Hartogsohn, I. (2017). Constructing drug effects: A history of set and setting. *Drug Science, Policy and Law*, *3*, 205032451668332. https://doi.org/10.1177/2050324516683325

Heppner, P. P., Wampold, B. E., Owen, J., Thompson, M. N., & Wang, K. T. (2016). *Research design in counseling* (4th ed.). Cengage.

Hilber, P., & Chapillon, P. (2005). Effects of harmaline on anxiety-related behavior in mice. *Physiology & Behavior*, *86*(1-2), 164-167. https://doi.org/10.1016/j.physbeh.2005.07.006

Irish, L., Kobayashi, I., & Delahanty, D. L. (2010). Long-term physical health consequences of childhood sexual abuse: A meta-analytic review. *Journal of Pediatric Psychology*, *35*(5), 450–461. https://doi.org/10.1093/jpepsy/jsp118

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55. doi: 10.1080/10705519909540118

Jeffreys, M. D., Reinfeld, C., Nair, P. V., Garcia, H. A., Mata-Galan, E., & Rentz, T. O. (2014). Evaluating treatment of posttraumatic stress disorder with cognitive processing therapy and prolonged exposure therapy in a VHA specialty clinic. *Journal of Anxiety Disorders*, *28*(1), 108-114. https://doi.org/10.1016/j.janxdis.2013.04.010

Johnson, N. L., & Johnson, D. M. (2021). An empirical exploration into the measurement of rape culture. *Journal of Interpersonal Violence*, *36*(1-2), NP70-NP95. https://doi.org/10.1177/0886260517732347

Kline, N. K., Berke, D. S., Rhodes, C. A., Steenkamp, M. M., & Litz, B. T. (2018). Self-blame

and PTSD following sexual assault: A longitudinal analysis. *Journal of Interpersonal Violence*, *36*(5-6), NP3153-NP3168. https://doi.org/10.1177/0886260518770652

Kline, R. B. (2015). Principles and practice of structural equation modeling. Guilford publications.

Knutsen, A. (2024). Psychedelics coming into the modern age of medicine. *Genetic Engineering & Biotechnology News*, *44*(2), 44-47. https://doi.org/10.1089/gen.44.02.15

Knutsen, M., & Jensen, T. K. (2017). Changes in the trauma narratives of youth receiving trauma-focused cognitive behavioral therapy in relation to posttraumatic stress symptoms. *Psychotherapy Research*, *29*(1), 99-111. https://doi.org/10.1080/10503307.2017.1303208

Ko, K., Kopra, E. I., Cleare, A. J., & Rucker, J. J. (2023). Psychedelic therapy for depressive symptoms: A systematic review and meta-analysis. *Journal of Affective Disorders*, *322*, 194-204. https://doi.org/10.1016/j.jad.2022.09.168

Konanur, S., & Muller, R. T. (2024). A community-based study of the impact of trauma exposure on school-aged children's self-concept and improvements following TF-CBT. *Child Abuse & Neglect*, *154*, 106921. https://doi.org/10.1016/j.chiabu.2024.106921

Koss, M.P., Anderson, R.A., Peterson, Z., Littleton, H., Abbey, A., Kowalski R., Thompson, M., Canan, S. White, J.W. McCauley, H., Orchowski, L., Fedina, L., Lopez, E., & Allen, C. (2024, in press). The Revised Victimization Version of the Sexual Experiences Survey (SES-V): Conceptualization, modifications, items and scoring. *The Journal of Sex Research*.

Laliotis, D., Luber, M., Oren, U., Shapiro, E., Ichii, M., Hase, M., La Rosa, L., Alter-Reid, K., &

St. Jammes, J. T. (2021). What is EMDR therapy? Past, present, and future directions. *Journal of EMDR Practice and Research*, *15*(4), 186-201 https://doi.org/10.1891/emdr-d-21-00029

Langlitz, N., & Gearin, A. K. (2024). Psychedelic therapy as form of life. *Neuroethics*, *17*(1). https://doi.org/10.1007/s12152-024-09550-9

Lang, P. J. (1977). Imagery in therapy: An information processing analysis of fear. *Behavior Therapy*, *8*(5), 862-886. https://doi.org/10.1016/s0005-7894(77)80157-3

Lang, P. J. (1979). A bio-informational theory of emotional imagery. *Psychophysiology*, *16*(6), 495-512. https://doi.org/10.1111/j.1469-8986.1979.tb01511.x

La Torre, J. T., Mahammadli, M., Faber, S. C., Greenway, K. T., & Williams, M. T. (2023). Expert opinion on psychedelic-assisted psychotherapy for people with Psychopathological psychotic experiences and psychotic disorders. *International Journal of Mental Health and Addiction*, *22*(2), 913-937. https://doi.org/10.1007/s11469-023-01149-0

Littleton, H., Grills, A. E., Kline, K. D., Schoemann, A. M., & Dodd, J. C. (2016). The From Survivor to Thriver program: RCT of an online therapist-facilitated program for rape-related PTSD. *Journal of Anxiety Disorders*, *43*, 41–51. https://doi-org.byu.idm.oclc.org/10.1016/j.janxdis.2016.07.010

Lonsway, K. A., & Fitzgerald, L. F. (1995). Attitudinal antecedents of rape myth acceptance: A theoretical and empirical reexamination. *Journal of Personality and Social Psychology*, *68*(4), 704-711. https://doi.org/10.1037/0022-3514.68.4.704

Ly, C., Greb, A. C., Cameron, L. P., Wong, J. M., Barragan, E. V., Wilson, P. C., Burbach, K. F.,

Soltanzadeh Zarandi, S., Sood, A., Paddy, M. R., Duim, W. C., Dennis, M. Y., McAllister, A. K., Ori-McKenney, K. M., Gray, J. A., & Olson, D. E. (2018). Psychedelics promote structural and functional neural plasticity. *Cell Reports*, *23*(11), 3170-3182. https://doi.org/10.1016/j.celrep.2018.05.022

McFarlane, A. C. (2018). Treatment resistance in post-traumatic stress disorder. *Treatment Resistance in Psychiatry*, 151-164. https://doi.org/10.1007/978-981-10-4358-1_10

MacLean, K. A., Johnson, M. W., & Griffiths, R. R. (2011). Mystical experiences occasioned by the hallucinogen psilocybin lead to increases in the personality domain of openness. *Journal of Psychopharmacology*, *25*(11), 1453-1461. https://doi.org/10.1177/0269881111420188

Magaraggia, I., Kuiperes, Z., & Schreiber, R. (2021). Improving cognitive functioning in major depressive disorder with psychedelics: A dimensional approach. *Neurobiology of Learning and Memory*, *183*, 107467. https://doi.org/10.1016/j.nlm.2021.107467

Maren, S., & Holmes, A. (2016). Stress and fear extinction. *Neuropsychopharmacology*, *41*(1), 58-79. https://doi.org/10.1038/npp.2015.180

Marks, M. (2023). The varieties of psychedelic law. *Neuropharmacology*, *226*, 109399. https://doi.org/10.1016/j.neuropharm.2022.109399

Maroti, D., Axelsson, E., Ljótsson, B., Andersson, G., Lumley, M., & Johansson, R. (2022). Psychometric properties of the emotional processing scale in individuals with psychiatric symptoms and the development of a brief 15-Item version. https://doi.org/10.21203/rs.3.rs-1216199/v1

Mason, F., & Lodrick, Z. (2023). Psychological consequences of sexual assault. *Best Practice & Research Clinical Obstetrics & Gynaecology*, *27*(1), 27-37.

https://doi.org/10.1016/j.bpobgyn.2012.08.015

McLean, C. P., & Foa, E. B. (2022). Prolonged exposure therapy. In *Evidence based treatments for trauma-related psychological disorders: A practical guide for clinicians* (pp. 161-179). Cham: Springer International Publishing.

Miles, L. W., Valentine, J. L., Mabey, L. J., Hopkins, E. S., Stodtmeister, P. J., Rockwood, R. B., & Moxley, A. N. H. (2023). A Systematic review of evidence-based treatments for adolescent and adult sexual assault victims. *Journal of the American Psychiatric Nurses Association*, 10783903231216138. https://doi.org/10.1177/10783903231216138

Mitchell, J. M., Bogenschutz, M., Lilienstein, A., Harrison, C., Kleiman, S., Parker-Guilbert, K., Ot'alora G., M., Garas, W., Paleos, C., Gorman, I., Nicholas, C., Mithoefer, M., Carlin, S., Poulter, B., Mithoefer, A., Quevedo, S., Wells, G., Klaire, S. S., van der Kolk, B., … Doblin, R. (2021). MDMA-assisted therapy for severe PTSD: A randomized, double-blind, placebo-controlled phase 3 study. *Nature Medicine*, *27*(6), 1025–1033. https://doi.org/10.1038/s41591-021-01336-3

Mithoefer, M. C., Feduccia, A. A., Jerome, L., Mithoefer, A., Wagner, M., Walsh, Z., Hamilton, S., Yazar-Klosinski, B., Emerson, A., & Doblin, R. (2019). MDMA-assisted psychotherapy for treatment of PTSD: Study design and rationale for phase 3 trials based on pooled analysis of six phase 2 randomized controlled trials. *Psychopharmacology*, *236*(9), 2735-2745. https://doi.org/10.1007/s00213-019-05249-5

Mithoefer, M. C., Mithoefer, A. T., Feduccia, A. A., Jerome, L., Wagner, M., Wymer, J., Holland, J., Hamilton, S., Yazar-Klosinski, B., Emerson, A., & Doblin, R. (2018). 3,4-methylenedioxymethamphetamine (mdma)-assisted psychotherapy for post-traumatic stress disorder in military veterans, firefighters, and police officers: A randomised,

double-blind, dose-response, phase 2 clinical trial. *The Lancet Psychiatry*, *5*(6), 486-497. https://doi.org/10.1016/s2215-0366(18)30135-4

Mithoefer, M. C., Wagner, M. T., Mithoefer, A. T., Jerome, L., Martin, S. F., Yazar-Klosinski, B., Michel, Y., Brewerton, T. D., & Doblin, R. (2013). Durability of improvement in post-traumatic stress disorder symptoms and absence of harmful effects or drug dependency after 3,4-methylenedioxymethamphetamine-assisted psychotherapy: A prospective long-term follow-up study. *Journal of Psychopharmacology*, *27*(1), 28-39. https://doi.org/10.1177/0269881112456611

Mithoefer, M. C., Wagner, M. T., Mithoefer, A. T., Jerome, L., & Doblin, R. (2011). The safety and efficacy of ±3,4-methylenedioxymethamphetamine-assisted psychotherapy in subjects with chronic, treatment-resistant posttraumatic stress disorder: The first randomized controlled pilot study. *Journal of Psychopharmacology*, *25*(4), 439–452. https://doi.org/10.1177/0269881110378371

Molero-Zafra, M., Mitjans-Lafont, M. T., Hernández-Jiménez, M. J., & Pérez-Marín, M. (2022). Psychological intervention in women victims of childhood sexual abuse: An open study—protocol of a randomized controlled clinical trial comparing EMDR psychotherapy and trauma-based cognitive therapy. *International Journal of Environmental Research and Public Health*, *19*(12), 7468. https://doi.org/10.3390/ijerph19127468

Mørkved, N., Hartmann, K., Aarsheim, L., Holen, D., Milde, A., Bomyea, J., & Thorp, S. (2014). A comparison of narrative exposure therapy and prolonged exposure therapy for PTSD. *Clinical Psychology Review*, *34*(6), 453-467. https://doi.org/10.1016/j.cpr.2014.06.005

Muttoni, S., Ardissino, M., & John, C. (2019). Classical psychedelics for the treatment of depression and anxiety: A systematic review. *Journal of Affective Disorders*, *258*, 11-24. https://doi.org/10.1016/j.jad.2019.07.076

Nour, M. M., Evans, L., Nutt, D., & Carhart-Harris, R. L. (2016). Ego-dissolution and psychedelics: Validation of the ego-dissolution inventory (EDI). *Frontiers in Human Neuroscience*, *10*. https://doi.org/10.3389/fnhum.2016.00269

Nichols, D. E. (2004). Hallucinogens. *Pharmacology & Therapeutics*, *101*, 131–181. https://doi.org/10.1007/springerreference_223970

Nichols, D. E. (2016). Psychedelics. *Pharmacological Reviews*, *68*(2), 264-355. https://doi.org/10.1124/pr.115.011478

Nurhalimah, N., Hamid, A. Y., Putri, Y. S., & Rachmawati, I. N. (2024). Trauma-focused cognitive behavioral therapy (TF-CBT) in victims of sexual violence who experience trauma: A systematic review. *Jurnal Info Kesehatan*, *22*(1), 90-103. https://doi.org/10.31965/infokes.vol22.iss1.1564

Nutt, D., Spriggs, M., & Erritzoe, D. (2023). Psychedelics therapeutics: What we know, what we think, and what we need to research. *Neuropharmacology*, *223*, 109257. https://doi.org/10.1016/j.neuropharm.2022.109257

O'Donnell, M. L., Creamer, M., & Pattison, P. (2004). Posttraumatic stress disorder and depression following trauma: Understanding comorbidity. *American Journal of Psychiatry*, *161*(8), 1390-1396. https://doi.org/10.1176/appi.ajp.161.8.1390

Oehen, P., Traber, R., Widmer, V., & Schnyder, U. (2013). A randomized, controlled pilot study

of MDMA (±3,4-Methylenedioxymethamphetamine)-assisted psychotherapy for treatment of resistant, chronic post-traumatic stress disorder (PTSD). *Journal of Psychopharmacology*, *27*(1), 40–52. https://doi.org/10.1177/0269881112464827

Orlowski, P., Ruban, A., Szczypiński, J., Hobot, J., Bielecki, M., & Bola, M. (2021). Psychedelics use predicts more positive emotional reactivity and diminished outward-focused self-consciousness: The mediating role of ego dissolution and mystical experiences. *Journal of Psychopharmacology*, *36*(8), 987-1000. https://doi.org/10.31234/osf.io/k4xfg

Ot'alora G, M., Grigsby, J., Poulter, B., Van Derveer, J. W., Giron, S. G., Jerome, L., Feduccia, A. A., Hamilton, S., Yazar-Klosinski, B., Emerson, A., Mithoefer, M. C., & Doblin, R. (2018). 3,4-Methylenedioxymethamphetamine-assisted psychotherapy for treatment of chronic posttraumatic stress disorder: A randomized phase 2 controlled trial. *Journal of Psychopharmacology*, *32*(12), 1295–1307. https://doi.org/10.1177/0269881118806297

Pace, B. J., & Devenot, N. (2021). Righting the course of psychedelic research: Toward an ethics of reciprocity. *Journal of Psychedelic Studies, 5*(1), 1–10. https://doi.org/10.1556/2054.2021.00141

Paivio, S. C., Jarry, J. L., Chagigiorgis, H., Hall, I., & Ralston, M. (2010). Efficacy of two versions of emotion-focused therapy for resolving child abuse trauma. *Psychotherapy Research*, *20*(3), 353-366. https://doi.org/10.1080/10503300903505274

Panin, M., & Abercrombie, J. (2024). The promise of MDMA in the future treatment of severe post-traumatic stress disorder. *Journal of Student Research*, *13*(2). https://doi.org/10.47611/jsrhs.v13i2.6443

Parcesepe, A. M., Martin, S. L., Pollock, M. D., & García-Moreno, C. (2015). The effectiveness

of mental health interventions for adult female survivors of sexual assault: A systematic review. *Aggression and Violent Behavior*, *25*, 15–25. https://doi.org/10.1016/j.avb.2015.06.004

Pollan, M. (2018). *How to change your mind: What the new science of psychedelics teaches us about consciousness, dying, addiction, depression, and transcendence*. Penguin.

Quasti, C., & Sisti, D. (2025). Indigenous wisdom and underground knowledge are exceptional. *The American Journal of Bioethics*, *25*(1), 105-106. https://doi.org/10.1080/15265161.2025.2434402

Rauch, S., & Foa, E. (2006). Emotional processing theory (EPT) and exposure therapy for PTSD. *Journal of Contemporary Psychotherapy*, *36*(2), 61–65. https://doi.org/10.1007/s10879-0069008-y

Regehr, C., Alaggia, R., Dennis, J., Pitts, A., & Saini, M. (2013). Interventions to reduce distress in adult victims of sexual violence and rape: A systematic review. *Campbell Systematic Reviews*, *9*(1), 1–133. https://doi.org/10.4073/csr.2013.3

Reiff, C. M., Richman, E. E., Nemeroff, C. B., Carpenter, L. L., Widge, A. S., Rodriguez, C. I., Kalin, N. H., McDonald, W. M., & and the Work Group on Biomarkers and Novel Treatments, a Division of the American Psychiatric Association Council of Research. (2020). Psychedelics and psychedelic-assisted psychotherapy. *American Journal of Psychiatry*, *177*(5), 391–410. https://doi.org/10.1176/appi.ajp.2019.19010035

Renshaw, W. B. (2020). The medical history & use of psychedelic drugs. *Legacy*, *20*(1), 5.

Resick, P. A., Nishith, P., Weaver, T. L., Astin, M. C., & Feuer, C. A. (2002). A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of*

Consulting and Clinical Psychology, *70*(4), 867-879. https://doi.org/10.1037//0022-006x.70.4.867

Resick, P. A., Suvak, M. K., & Wells, S. Y. (2014). The impact of childhood abuse among women with assault-related PTSD receiving short-term cognitive–behavioral therapy. *Journal of Traumatic Stress*, *27*(5), 558–567. https://doi.org/10.1002/jts.21951

Resick, P. A., Williams, L. F., Suvak, M. K., Monson, C. M., & Gradus, J. L. (2012). Long-term outcomes of cognitive–behavioral treatments for posttraumatic stress disorder among female rape survivors. *Journal of Consulting and Clinical Psychology*, *80*(2), 201-210. https://doi.org/10.1037/a0026602

Riba, J., Rodríguez-Fornells, A., Urbano, G., Morte, A., Antonijoan, R., Montero, M., Callaway, J. C., & Barbanoj, M. J. (2001). Subjective effects and tolerability of the south American psychoactive beverage Ayahuasca in healthy volunteers. *Psychopharmacology*, *154*(1), 85-95. https://doi.org/10.1007/s002130000606

Robjant, K., & Fazel, M. (2010). The emerging evidence for narrative exposure therapy: A review. *Clinical Psychology Review*, *30*(8), 1030-1039. https://doi.org/10.1016/j.cpr.2010.07.004

Rose, J. R. (2024). Memory, trauma, and self: Remembering and recovering from sexual abuse in psychedelic-assisted therapy. *Journal of Psychedelic Studies*. https://doi.org/10.1556/2054.2024.00363

Roseman, L., Nutt, D. J., & Carhart-Harris, R. L. (2018). Quality of acute psychedelic experience predicts therapeutic efficacy of psilocybin for treatment-resistant depression. *Frontiers in Pharmacology*, *8*. https://doi.org/10.3389/fphar.2017.00974

Rothbaum, B. O., Astin, M. C., & Marsteller, F. (2005). Prolonged exposure versus eye

movement desensitization and reprocessing (EMDR) for PTSD rape victims. *Journal of Traumatic Stress*, *18*(6), 607–616. https://doi.org/10.1002/jts.20069

Salazar, T. (2022). Trip or treat: Psychedelic drug reform in California. *University of the Pacific Law Review*, *53*(2), 321.

Rupp, C., Doebler, P., Ehring, T., & Vossbeck-Elsebusch, A. N. (2017). Emotional Processing Theory Put to Test: A meta-analysis on the association between process and outcome measures in exposure therapy. *Clinical Psychology & Psychotherapy*, *24*(3), 697–711. https://doi.org/10.1002/cpp.2039

Sachs-Ericsson, N., Kendall-Tackett, K. A., Sheffler, J., Arce, D., & Corsentino, E. (2014). The influence of prior rape on the psychological and physical health functioning of older adults. *Aging & Mental Health*, *18*(6), 717–730. https://doi.org/10.1080/13607863.2014.884538Sadler

Santos, R., Landeira-Fernandez, J., Strassman, R., Motta, V., & Cruz, A. (2007). Effects of ayahuasca on psychometric measures of anxiety, panic-like and hopelessness in santo Daime members. *Journal of Ethnopharmacology*, *112*(3), 507-513. https://doi.org/10.1016/j.jep.2007.04.012

Schafer, J. L. (1999). Multiple imputation: a primer. *Statistical Methods in Medical Research, 8*(1), 3-15. https://doi.org/10.1191/096228099671525676

Schauer, M., Neuner, F., Elbert, T., Ertl, V., Onyut, L. P., Odenwald, O., & Schauer, M. (2004). Narrative exposure therapy is a promising treatment of PTSD for refugees. *Intervention*, 18-32. https://doi.org/10.1037/e501212006-004

Schimmers, N., Breeksema, J. J., Smith-Apeldoorn, S. Y., Veraart, J., Van den Brink, W., &

Schoevers, R. A. (2021). Psychedelics for the treatment of depression, anxiety, and existential distress in patients with a terminal illness: A systematic review. *Psychopharmacology*, *239*(1), 15-33. https://doi.org/10.1007/s00213-021-06027-y

Schwarz, G. (1978). Estimating the dimension of a model. *The Annals of Statistics*, *6*(2), 461-464. https://doi.org/10.1214/aos/1176344136

Schwarz, J. E., Baber, D., Barter, A., & Dorfman, K. (2019). A mixed methods evaluation of EMDR for treating female survivors of sexual and domestic violence. *Counseling Outcome Research and Evaluation*, *11*(1), 4–18. https://doi.org/10.1080/21501378.2018.1561146

Simmons, C. A. (2007). Speculation as to why women "Get" PTSD more often than men. *Women & Therapy*, *30*(1-2), 85-98. https://doi.org/10.1300/j015v30n01_05

Simonsson, O., Hendricks, P. S., Chambers, R., Osika, W., & Goldberg, S. B. (2023). Prevalence and associations of challenging, difficult or distressing experiences using classic psychedelics. *Journal of Affective Disorders*, *326*, 105-110. https://doi.org/10.1016/j.jad.2023.01.073

Smith, S.G., Zhang, X., Basile, K.C., Merrick, M.T., Wang, J., Kresnow, M., Chen, J. (2018). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2015 Data Brief – Updated Release. Atlanta, GA: National Center for Injury Prevention and Control*, Centers for Disease Control and Prevention.

Soper, D. (2021). *A-priori sample size calculator for structural equation models.* Retrieved from https://danielsoper.com/statcalc/calculator.aspx?id=89#

Spytska, L. (2024). Psychosexual trauma: Examining public perceptions and approaches to

destigmatization. *European Journal of Trauma & Dissociation*, *8*(4), 100443. https://doi.org/10.1016/j.ejtd.2024.100443

Staples, J. M., & Fuller, C. C. (2021). Adult sexual assault severity among transgender people of color: The impact of double marginalization. *Journal of Aggression, Maltreatment & Trauma*, *30*(5), 694-706. https://doi.org/10.1080/10926771.2021.1894291

Steenkamp, M. M., Dickstein, B. D., Salters-Pedneault, K., Hofmann, S. G., & Litz, B. T. (2012). Trajectories of PTSD symptoms following sexual assault: Is resilience the modal outcome? *Journal of Traumatic Stress*, *25*(4), 469-474. https://doi.org/10.1002/jts.21718

Stockdale, M. S., Logan, T., Sliter, K. A., & Berry, S. A. (2014). Interpersonal violence victimization and sexual harassment: A prospective study of revictimization. *Sex Roles*, *71*(1-2), 55-70. https://doi.org/10.1007/s11199-014-0377-5

Stoliker, D., Egan, G. F., Friston, K., & Razi, A. (2022). Neural mechanisms and psychology of psychedelic ego dissolution. *Pharmacological Reviews*, *74*(4), 876-917. https://doi.org/10.31234/osf.io/aewtm

Stroud, J. B., Freeman, T. P., Leech, R., Hindocha, C., Lawn, W., Nutt, D., Curran, H., & Carhart-Harris, R. L. (2017). Psilocybin with psychological support improves emotional face recognition in treatment-resistant depression. *Psychopharmacology*, *235*(2), 459-466. https://doi.org/10.1007/s00213-017-4754-y

Ullman, S. E., & Peter-Hagene, L. C. (2014). Longitudinal relationships of social reactions, PTSD, and Revictimization in sexual assault survivors. *Journal of Interpersonal Violence*, *31*(6), 1074-1094. https://doi.org/10.1177/0886260514564069

Ullman, S. E., Relyea, M., Peter-Hagene, L., & Vasquez, A. L. (2013). Trauma histories,

substance use coping, PTSD, and problem substance use among sexual assault victims. *Addictive Behaviors*, *38*(6), 2219-2223. https://doi.org/10.1016/j.addbeh.2013.01.027

Vernon, P. (2022). Sexuality, gender, and the colonial violence of humanitarian intervention. *International Studies Review*, *24*(3). https://doi.org/10.1093/isr/viac035

Vollenweider, F. X., & Kometer, M. (2010). The neurobiology of psychedelic drugs: Implications for the treatment of mood disorders. *Nature Reviews Neuroscience*, *11*(9), 642-651. https://doi.org/10.1038/nrn2884

Wagner, M. T., Mithoefer, M. C., Mithoefer, A. T., MacAulay, R. K., Jerome, L., Yazar-Klosinski, B., & Doblin, R. (2017). Therapeutic effect of increased openness: Investigating mechanism of action in MDMA-assisted psychotherapy. *Journal of Psychopharmacology*, *31*(8), 967–974. https://doi.org/10.1177/0269881117711712

Wang, S., Feng, M., Fang, Y., Lv, L., Sun, G., Yang, S., Guo, P., Cheng, S., Qian, M., & Chen, H. (2023). Psychological trauma, posttraumatic stress disorder and trauma-related depression: A mini-review. *World Journal of Psychiatry*, *13*(6), 331-339. https://doi.org/10.5498/wjp.v13.i6.331

Warwar, S. H., & Greenberg, L. S. (2023). Emotion-focused therapy. *Encyclopedia of Mental Health*, *1*(3), 743-750. https://doi.org/10.1016/B978-0-323-91497-0.00175-2

Westland, J. C. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications, 9*(6), 476-487. https://doi.org/10.1016/j.elerap.2010.07.003

Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist, 34*(5), 719-751. doi: 10.1177/0011000006286345

Whisnant, R. (2021). Feminist perspectives on rape. In *Stanford encyclopedia of philosophy*.

Whittaker, T. A., & Schumacker, R. E. (2022). *A beginner's guide to structural equation modeling* (5th ed.). Erlbaum.

Williams, M. T., Davis, A. K., Xin, Y., Sepeda, N. D., Grigas, P. C., Sinnott, S., & Haeny, A. M. (2020). People of color in North America report improvements in racial trauma and mental health symptoms following psychedelic experiences. *Drugs: Education, Prevention and Policy*, *28*(3), 215-226. https://doi.org/10.1080/09687637.2020.1854688

Williams, R. M., Davis, M. C., & Millsap, R. E. (2002). Development of the cognitive processing of trauma scale. *Clinical Psychology & Psychotherapy*, *9*(5), 349-360. https://doi.org/10.1002/cpp.343

Williams, W. I. (2006). Complex trauma: Approaches to theory and treatment. *Journal of Loss and Trauma*, *11*(4), 321-335. https://doi.org/10.1080/15325020600663078

Winkelman, M. J. (2021). The evolved psychology of psychedelic set and setting: Inferences regarding the roles of shamanism and entheogenic ecopsychology. *Frontiers in Pharmacology*, *12*, 619890. https://doi.org/10.3389/fphar.2021.619890

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution impropriety. *Educational and Psychological Measurement*, *73*, 913-934. https://doi.org/10.1177/0013164413495237

Wolff, M., Evens, R., Mertens, L. J., Koslowski, M., Betzler, F., Gründer, G., & Jungaberle, H. (2020). Learning to let go: A cognitive-behavioral model of how psychedelic therapy promotes acceptance. *Frontiers in Psychiatry*, *11*, 5. https://doi.org/10.3389/fpsyt.2020.00005

Wolff, M., Evens, R., Mertens, L. J., Schmidt, C., Beck, J., Rutrecht, H., Cherniak, A. D., Gründer, G., & Jungaberle, H. (2024). Measuring psychotherapeutic processes in the context of psychedelic experiences: Validation of the general change mechanisms questionnaire (GCMQ). *Journal of Psychopharmacology*, *38*(5), 432-457. https://doi.org/10.1177/02698811241249698

Table 1

Correlations and Descriptive Statistics for Study Variables (N = 230)

Variable	1	2	3	4	5	6	7	8	9	10
1: Problem Actuation	--									
2: Resource Activation	-..06	--								
3: Clarification	.44***	.56***	--							
4: Mastery	.35***	.62***	.84***	--						
5: Depression	.29***	-.39	.11	.08	--					
6: Anxiety	.40***	-.02	.22***	.81***	.19**	--				
7: Stress	.32***	-.07	.14*	.11	.81***	.83***	--			
8: PTSD	.50***	.00	.27***	.24***	.75***	.79***	.75***	--		
9: SA Severity	.23***	-.02	.07	.06	.33***	.44***	.39***	.42***	--	
10: Time Since SA	-.06	-.05	-1.0	-.06	-.15*	-.15*	-.15*	-.17*	-.79	--
Mean	11.32	13.93	12.73	12.19	6.60	6.75	7.16	29.18	11.02	4.83
Standard Deviation	7.08	7.27	6.68	7.17	5.75	5.14	5.33	19.96	6.62	1.58
Skewness	.01	-.32	-.18	-.13	.56	.67	.23	.36	.99	-1.04
Kurtosis	-.94	-.91	-.80	-1.01	-.82	-.45	-.97	-.77	.58	-.322

Note. Problem Actuation, Resource Activation, Clarification, and Mastery measured by the General Change Mechanisms Questionnaire (GCMQ); Depression, Anxiety, and Stress measured by the Depression, Anxiety, and Stress Scale (DASS-21); PTSD = Post Traumatic Stress Disorder, measured by the The Posttraumatic Stress Disorder Checklist for the DSM-5 (PCL-5); SA Severity = Sexual Assault Severity, measured by the Sexual Experiences Survey–Victimization Version (SES-V); Time Since SA = Time Since Sexual Assault

* $p < .05$ ** $p < .01$ *** $p < .001$

**** Transformed this variable using the Square Root Transformation function.

Table 2

Summary of goodness-of-fit statistics for competing models

Model	χ^2 (*df*); *p*	*TLI*	*CFI*	RMSEA	SRMR	BIC
***A priori* fit indices**	***Non-significant***	**≥ .90**	**≥ .90**	**≤. 10**	**≤. 10**	**--**
Hypothesized	145.818 (19); < .001*	.86	.91*	.17	.13	238.27
Hypothesized, Modification #1	86.924 (18); < .0018	.92*	.95*	.12	.11	184.81
Hypothesized, Modification #2	59.738 (17); < .001*	.94*	.96*	.10*	.10*	163.06
Alternative	47.082 (15); < .001*	.96*	.98*	.10*	.04*	166.59

Note. TLI = Tucker–Lewis index; *CFI* = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root mean square residual.
* Indicates that the value meets the *a priori* determined criteria.

Figure 1

Application of Emotional Processing Theory for Psychedelic Use

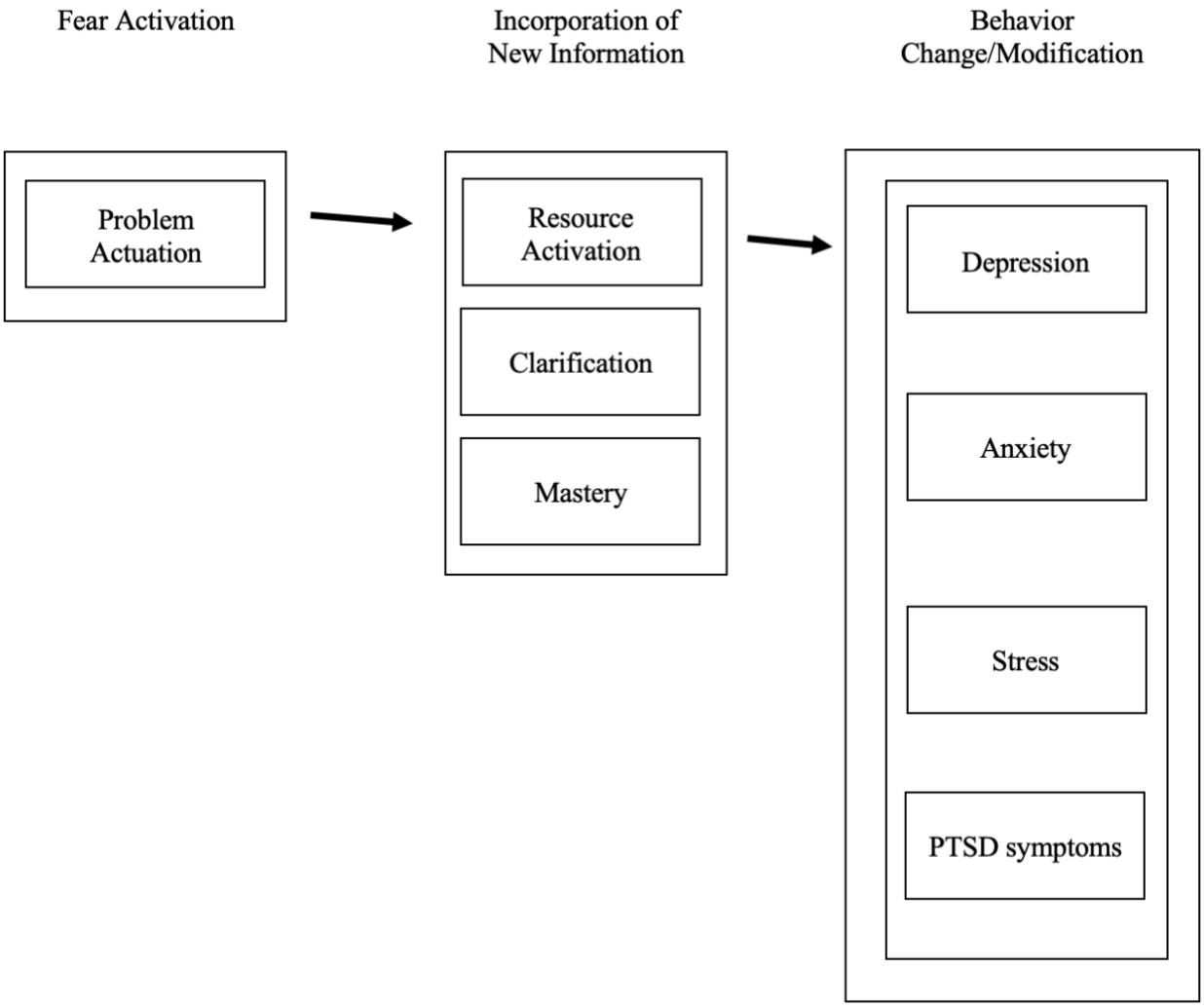


Figure 2

Hypothesized Model

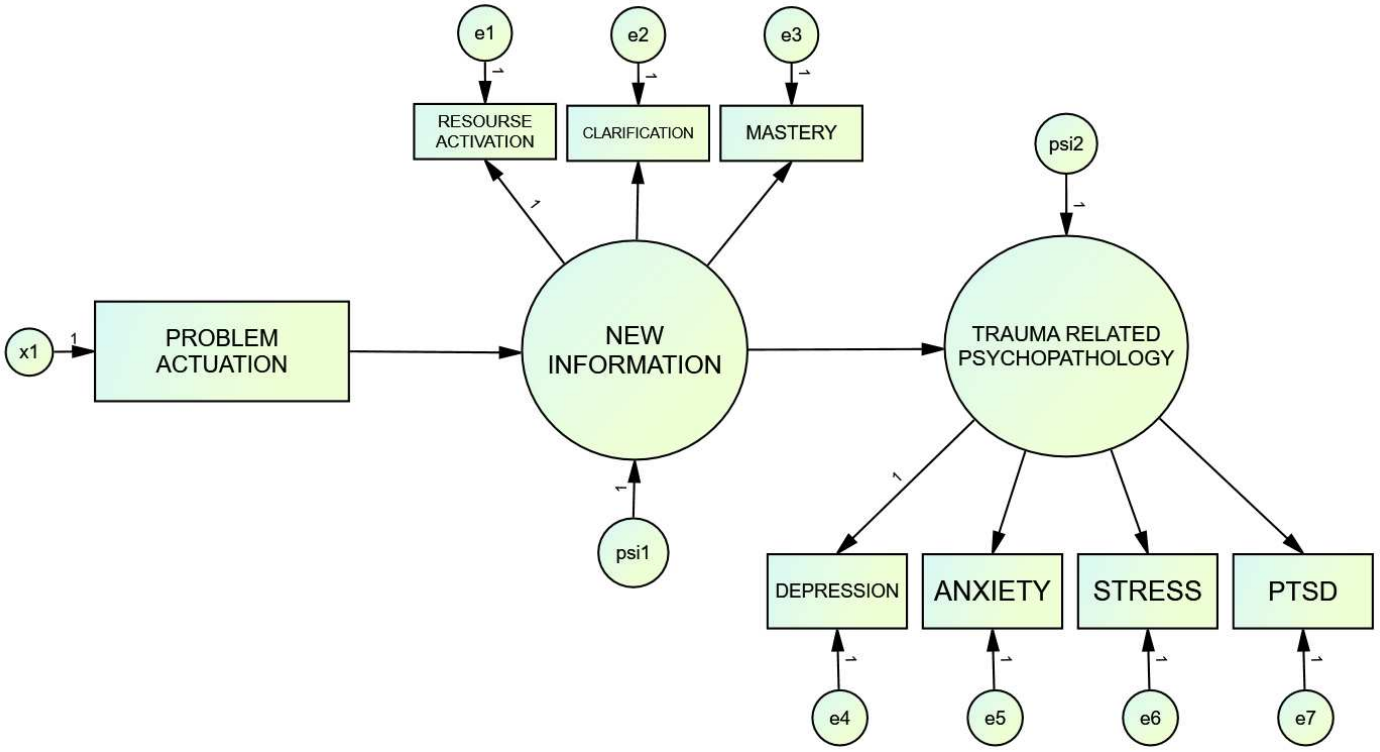


Figure 3

Alternative Model

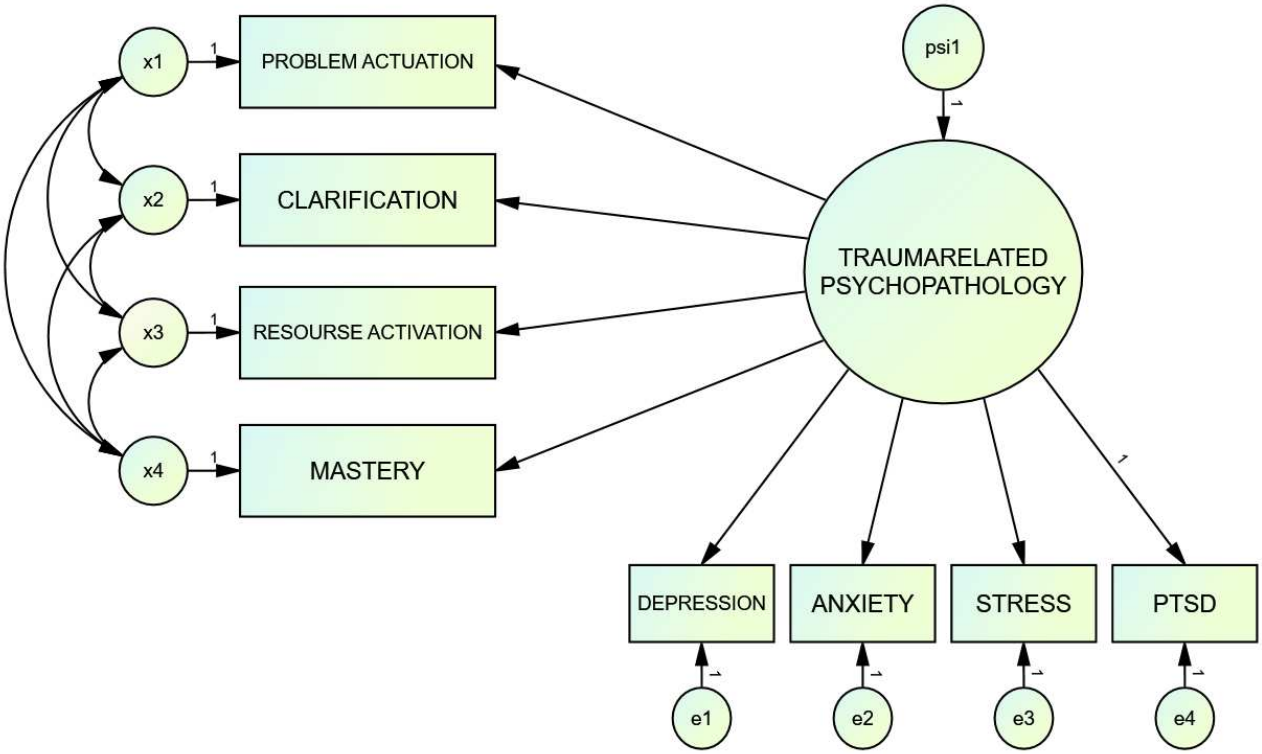
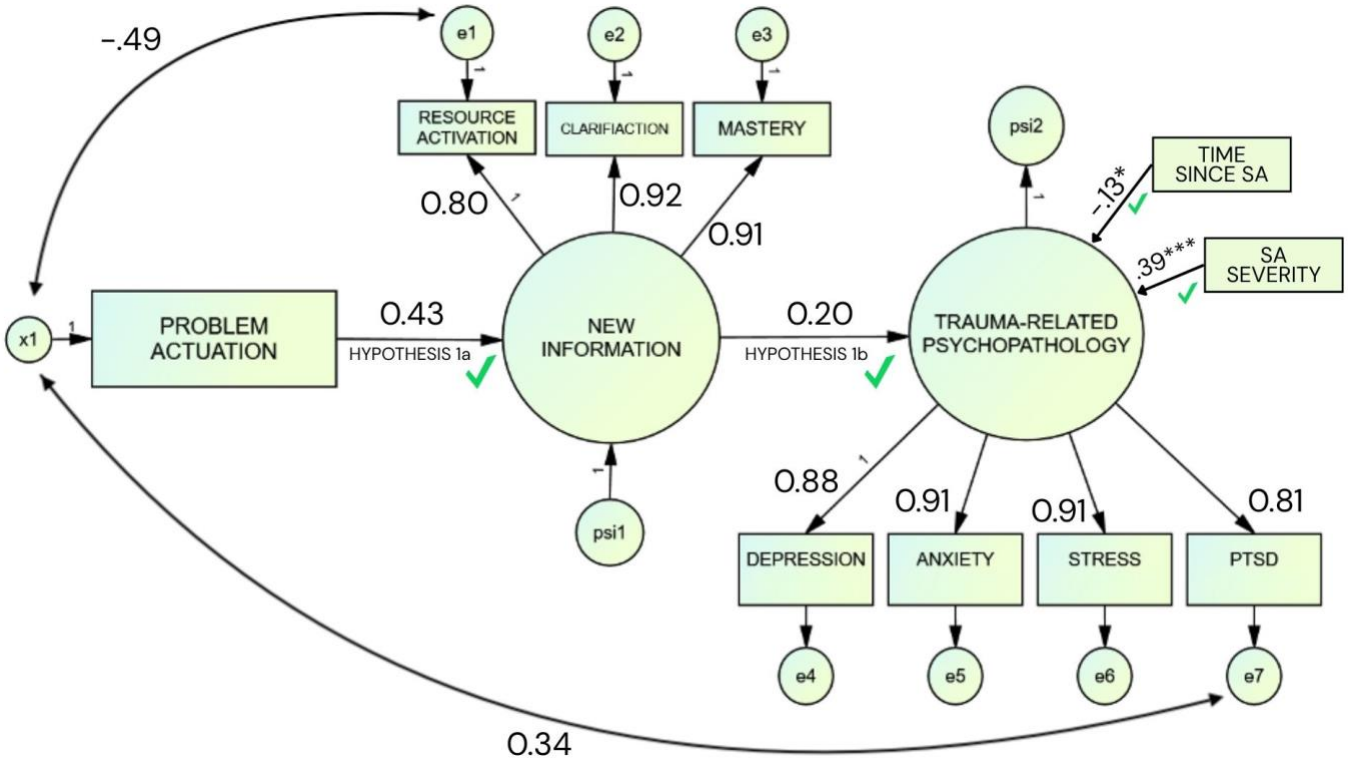


Figure 4

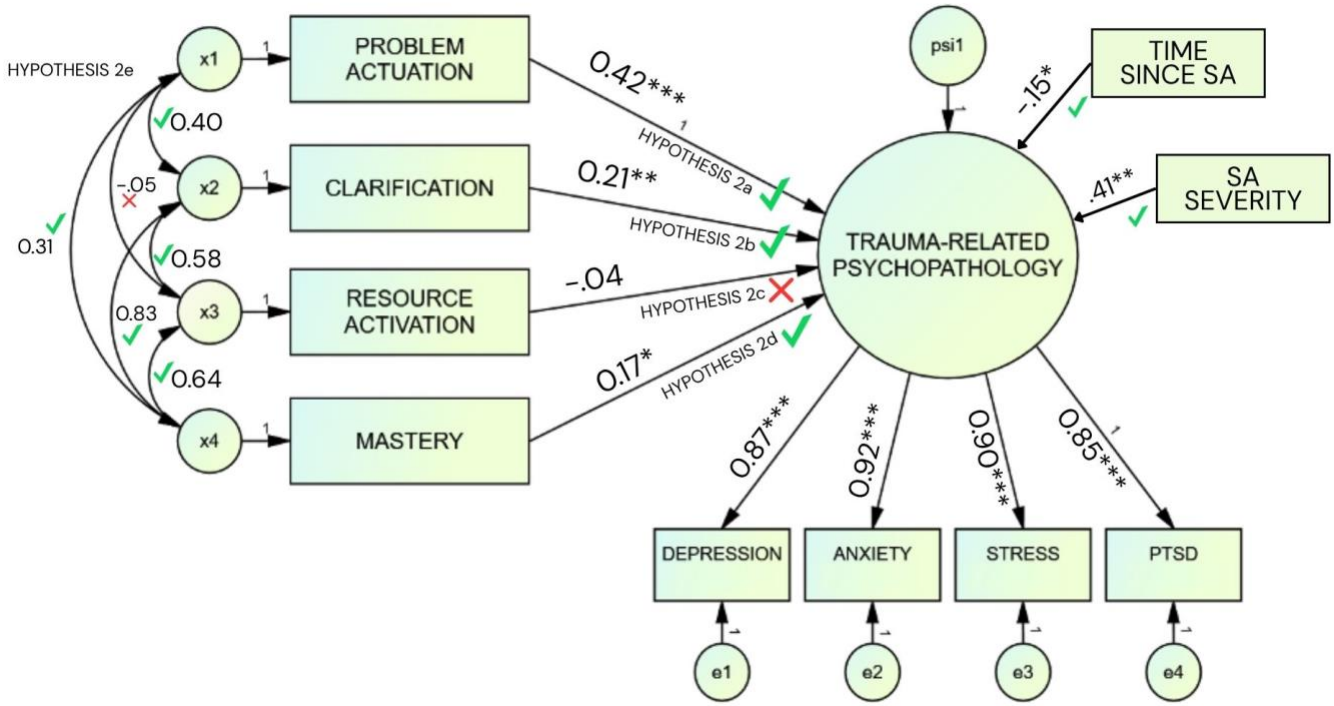
Final Structural Equation Model of the Hypothesized Modified Model



Note. Standardized path coefficients (β) are shown. All factor loadings were significant at $p <$ .001. SA = Sexual Assault. Model fit: $\chi^2(17) = 59.738$, $p < .001$; CFI = .97; TLI = .95; RMSEA = .10; SRMR = .10; BIC = 163.06.

Figure 5

Final Structural Equation Model of the Alternative Model



Note. Standardized path coefficients (β) are shown. Factor loading significance: * $p < .05$; ** $p < .01$; *** $p < .001$. Model fit: $\chi^2(15) = 47.082$, $p < .001$; CFI = .98; TLI = .96; RMSEA = .10; SRMR = .04; BIC = 166.59.

Appendix A
Demographics Survey

Eligibility Screening Questions

1. How old are you? [< 18 = directed away from survey]
2. Have you survived an incident of sexual assault in the past since the age of 14?
    a. Yes
    b. No [Directed away]
3. Are you able to read, write, and speak English fluently?
    a. Yes
    b. No [Directed away]
4. Do you currently live within the United States?
    a. Yes
    b. No [Directed away]
5. Have you taken a dose of a classic psychedelic that produced a moderate to strong psychoactive effect since you were sexually assaulted? This includes: LSD, psilocybin or psilocybin-containing mushrooms, mescaline or mescaline-containing cacti, or ayahuasca and/or DMT.
    a. Yes [Directed to select which psychedelic]
    b. No [Directed away]
6. Which **classic psychedelic** did you take after you were sexually assault?
    a. LSD [Directed to #6]
    b. Psilocybin (mushrooms) [Directed to #6]
    c. Mescaline [Directed to #6]
    d. Ayahuasca and/or DMT [Directed to #6]
    e. None [Directed away]

Additional Demographic Questions

1. Which of the following describe you? Please select all boxes that apply:
    a. Asian (for example: Chinese, Filipino, Indian, Japanese, Korean, Vietnamese, etc.)
    b. Black or African American (for example: African American, Ethiopian, Haitian, Jamaican, Nigerian, Somalian, etc.)
    c. Hispanic, Latinx, or Spanish origin (for example: Colombian, Cuban, Dominican, Mexican or Mexican American, Puerto Rican, Salvadoran, etc.)
    d. Middle Eastern or North African (for example: Algerian, Egyptian, Iranian, Lebanese, Moroccan, Syrian, etc.)
    e. Native, Indigenous, or American Indian (for example: Aztec, Blackfeet Tribe, Mayan, Native Village of Barrow Inupiat Traditional Government, Navajo Nation, Nome Eskimo Community, etc.)
    f. Native Hawaiian or Other Pacific Islander (for example: Chamorro, Fijian, Marshallese, Native Hawaiian, Samoan, Tongan, etc.)
    g. White or European American (for example: English, French, German, Irish, Polish, Russian, etc.)
    h. Not Listed Race, Ethnicity or Origin (fill in the blank provided)

2. What is your sexual identity?
3. Please select the option(s) that most closely represent your sexual identity:
    a. Asexual
    b. Gay or Lesbian
    c. Bisexual
    d. Straight (heterosexual)
    e. Prefer not to answer
4. What is your gender identity?
5. Please select the option(s) that most closely represent your gender identity:
    a. Woman
    b. Man
    c. Non-binary
    d. Trans
    e. Prefer not to answer
6. People are different in their sexual attraction to other people. Which best describes your feelings? Are you:
    a. Only attracted to women?
    b. Mostly attracted to women?
    c. Equally attracted to women and men?
    d. Mostly attracted to men?
    e. Only attracted to men?
    f. Mostly attracted to non-binary individuals?
    g. Only attracted to non-binary individuals?
    h. Equally attracted to all genders?
    i. Not sure?
    j. Prefer not to answer
7. Please select the value that best represents your household income [Note: per U.S. Census Bureau brackets]
    a. Less than $20,000
    b. $20,000 - $44,999
    c. $45,000 - $139,999
    d. $140,000 - $149,999
    e. $150,000 - $199,999
    f. $200,000+
8. What is your religion?
    i. Adventist
    ii. Agnostic
    iii. Atheist
    iv. Baptist
    v. Buddhist
    vi. Catholic
    vii. Episcopalian/Anglican
    viii. Hindu
    ix. Jehovah's Witness
    x. Jewish
    xi. Lutheran
    xii. Methodist
    xiii. Mormon/LDS
    xiv. Muslim
    xv. Native American Religion
    xvi. New Age
    xvii. Nondenominational Christian
    xviii. None
    xix. Not listed (fill in the blank)

xx. Orthodox Christian
xxi. Pentecostal
xxii. Presbyterian
xxiii. Protestant
xxiv. Sikh
xxv. Unitarian

Appendix B

Informed Consent Form

Naturalistic Psychedelic Use and Emotional Processing Theory

You are invited to be in a research study. The research aims to explore **the relationship between psychedelics and mental health symptoms in survivors of sexual assault.** You are invited to take part in this study because you are at least 18 years old, survived an incident of sexual assault since the age of 14, are able to read, write, and speak English fluently, and currently reside within the United States, and have taken a dose of a classic psychedelic (e.g., psilocybin mushrooms, LSD, ayahuasca, mescaline, DMT, 5-MeO-DMT) that produced moderate to strong psychoactive effects since you were sexually assaulted. Please note that you must be located within the United States at the time you take part in the study to participate. If you do not meet the inclusion criteria listed in the surveys, you will be routed out of the survey. Before you agree to be in the study, please read this form and ask any questions you have. **Your participation is completely voluntary. This means that whether you take part in this research is completely up to you.**

This study is being conducted by: Madison Tschauner, M.Ed., Department of Education and Human Services, Lehigh University, under the direction of Christopher Liang, PhD, Department of Education and Human Services, Lehigh University

BACKGROUND INFORMATION
The purpose of this study is to generate a broader understanding of how psychedelics influence survivor's trauma symptoms subsequent to being sexually assaulted.

PROCEDURES
If you agree to be in this study, we will ask you to respond honestly and carefully to a series of questions in an online survey about your background, your sexual experiences, psychedelic experiences, coping, and recent mental health symptoms. The survey will take approximately 30 minutes to complete.

RISKS AND BENEFITS TO THE STUDY
The study involves the following foreseeable risks: We do not expect that you will experience any physical, social, legal, or economic risks associated with your participation in this study. However, this study addresses sensitive topics about sexual assault and mental health that may be difficult to answer. For example, the study will include questions about previous unwanted sexual contact, sexual coercion, attempted rape, and rape. We anticipate that some participants might experience short-term psychological discomfort and/or distress in response to answering questions about these topics. This study also addresses experiences with illegal substance use (i.e., psychedelics). Given that you are being asked about the use of illegal substances, we will not collect any information that can directly identify you.

In the event that you experience discomfort or distress related to your participation in the study, the following resources are available to you 24/7:

- Calling the **National Crisis Line** (toll-free) at **1-800-273-TALK (8255)**
- Calling the **National Sexual Assault Hotline** at **1-800-656-4673**

If you are experiencing an immediate mental health crisis (e.g., suicidal intent), call 911 and seek assistance at your nearest emergency room.

The benefits to participation are: We do not anticipate that you will experience any direct benefits from participating in this study. However, we expect that this study will help us learn more information about how non-clinical psychedelic use relates to sexual assault survivors trauma-related mental health symptoms. The results of this study are anticipated to inform treatment recommendations for sexual assault.

DURATION
Your participation in the study involves the following time commitment: The survey will take approximately 30 minutes to complete. The survey software will give you regular updates about how far you have progressed through the survey as you go along.

COMPENSATION
You will receive $4.00 through the Prolific platform for your participation in this study. In order to be eligible for this compensation, you must reach the end of the survey and respond accurately to certain items. You may, however, skip any items within the survey that you would prefer not to answer. If you accidentally exit the survey window before reaching the end of the survey, please contact the investigators at met220@lehigh.edu so that you can receive compensation for your work.

CONFIDENTIALITY
We will collect an anonymized version of your Prolific ID. Your identity will not be revealed in any publications, presentations, or reports about this research study. We will collect your information through Qualtrics. This information will be stored in a restricted access folder on the primary researchers' computers. We will not ask you to provide any directly identifying information.

The research team does their best to keep your information anonymous to the degree permitted by technology. It is possible, although unlikely, that unauthorized individuals could access your online responses. However, this risk is similar to a person's everyday use of the internet.

It is unlikely, but possible, that others (such as Lehigh University or state or federal officials) may require us to share the responses you give us to ensure the research was conducted safely and appropriately. We will only share your responses if law or policy requires us to do so. Since the data is anonymized, the data will not be identifiable.

VOLUNTARY NATURE OF THE STUDY
Participation in this study is entirely voluntary. If you decide not to participate there will be no penalty, and you will not lose benefits to which you are otherwise entitled. Your decision whether to participate will not affect your current or future relations with Lehigh University. If

you decide to participate, you are free to not answer any question or stop your participation in the study at any time without affecting those relationships.

CONTACTS AND QUESTIONS
The Institutional Review Board (IRB) for the protection of human research participants at Lehigh University has reviewed and approved this study. If you have questions about the research study itself, please contact researcher Madison Tschauner, M.Ed., at met220@lehigh.edu. If you have questions about your rights or would simply like to speak with someone other than the research team about the questions or concerns, please contact the IRB at (610) 758-2871 or inirb@lehigh.edu. All reports or correspondence will be kept confidential.

You are encouraged to save a copy of this information to keep for your records.

STATEMENT OF CONSENT
By clicking ok below, you are certifying that you have read this consent, understand the potential risks, and are consenting to participate in this survey. Please email met220@lehigh.edu to receive a copy of this form.

- I have read the above consent form, understand the information provided, and consent to participate in the study. I am aware that I can stop participating in the study at any time without consequence.

Appendix C

1. Please indicate which **classic psychedelic substance** you had taken which may have included the experience of your experience of sexual assault. For this question we would like you to select the substance that occurred after your experience of sexual assault and incorporated your sexual assault experience.
   a. Psilocybin/mushrooms
   b. LSD/acid
   c. Ayahuasca
   d. N,N-DMT (dimethyltryptamine)
   e. Mescaline
   f. Peyote cactus
   g. Other: _____

2. Age at experience:

3. How long ago did this experience occur?
   a. 1 – 2 months ago
   b. 3 – 6 months ago
   c. 7 – 11 months ago
   d. 1 – 2 years ago
   e. 3 – 4 years ago
   f. 5 – 6 years ago
   g. 7 – 10 years ago
   h. More than 10 years ago

4. How would you characterize the dose of the psychedelic?
   a. Low
   b. Moderate
   c. Moderately high
   d. High

5. Please specify how you consumed the psychedelic.
   a. Smoked or vaporized
   b. Intravenous (IV)
   c. Intramuscular (IM)
   d. Oral (e.g., swallowed)
   e. Intranasal (e.g., snorted)

6. Approximately how long did the psychedelic experience last (including come up, peak, and come down)?
   a. Less than 30 minutes
   b. 30 minutes to 1 hour
   c. 1 to 2 hours
   d. 2 to 4 hours
   e. 4 to 6 hours

f. 6 to 8 hours
g. 8 to 10 hours
h. 10 to 15 hours
i. 15 hours or more

7. Were you under the influence of any other psychoactive substance at the time of the experience (excluding caffeine and nicotine) that contributed significantly to the psychedelic experience?
    a. Yes
        a. If yes, what?
    b. No
    c. Unsure

8. How long after your experience of sexual assault did your naturalistic psychedelic experience occur?
    a. 1 – 2 months
    b. 3 – 6 months
    c. 7 – 11 months
    d. 1 – 2 years
    e. 3 – 4 years
    f. 5 – 6 years
    g. 7 – 10 years
    h. More than 10 years

9. Please select the option(s) that best describe the setting in which you took the psychedelic:
    a. Setting
        i. In private
        ii. In public
    b. Environment
        i. Indoors
        ii. Outdoors
    c. Company
        i. By myself
        ii. With one other person
        iii. With a few people
        iv. In a large group of people
        v. With a guide (i.e., practitioner)

10. Please select the option(s) that best describe your initial intentions of taking the psychedelic:
    a. For fun/recreational use
    b. For creative reasons (i.e., for the purpose of creative inspiration)
    c. For therapeutic reasons
    d. For spiritual reasons
    e. Other: (fill in)
11. Some users of psychedelics have reported having what is commonly called a “bad trip” which is defined as *a challenging or distressing experience during a psychedelic session,*

often characterized by fear, confusion, or negative emotions. To what extent does this reflect your personal experience:

a. not at all
b. a little bit
c. moderately
d. quite a bit
e. extremely

12. How do you think your naturalistic use of psychedelics impacted your anxiety, depression, stress, and trauma symptoms? (Fill-in)

Appendix D
Sexual Experiences Survey Victimization Version (SES-V; Koss et al., 2024)

This survey asks personal questions about sexual things that happened either in person or through on-line communication.

When we say "someone," it could include friends, dates, romantic partners, spouses or live-in partners, ex-partners, relatives, bosses/supervisors, health care providers, teachers, coaches, religious personnel, youth group counselors/leaders, or strangers.

Sometimes more than one of these questions apply to the same sexual experience. Please answer all questions even if you have already partially described the experience in response to another question.

We hope you will answer as honestly as you can. [Insert language about either confidentiality or anonymity of responses as negotiated with your Institutional Review Board.] Past research shows that many people report having at least one of these experiences.

Module 1: Non-Contact

These questions are about experiences that happened in person but without any direct body contact.

	Since your 14th birthday, how many times has…	0	1	2	3	4	5	6	7	8	9	10+
1.	Someone made sexual comments about my body or sex life after I asked them to stop.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	Someone kept staring at me in a sexual way after I asked them to stop.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	Someone watched me while I was undressing, was nude, or was having sex without first asking if it was okay	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	Someone exposed the private areas of their body such as the genital area or penis without first asking if it was okay.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	Someone masturbated in front of me without first asking if it was okay.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Module 2: Cybersex

These questions ask about receiving sexual content via the Internet, texts, emails, gaming apps, dating sites, or social media.

	Since your 14th birthday, how many times has…	0	1	2	3	4	5	6	7	8	9	10+
6.	Someone sent me sexual materials electronically (by email, text, or social media) such as pictures, jokes, or stories without first asking if it was okay.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	Someone continued to electronically send me sexual materials after I asked them to stop.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	Someone posted sexual comments about me on-line without first asking if it was okay.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9.	Someone *threatened* to send nude or semi-nude photos or intimate videos of me to others or to post them online without first asking if it was okay.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10.	Someone sent nude or semi-nude photos or intimate videos of me to others or posted them online without first asking if it was okay.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11.	Someone tried to get me to talk about sex online when I did not want to.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12.	Someone asked me online for sexual information about myself when I did not want to tell.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13.	Someone asked me to do something sexual online when I did not want to.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
14.	Someone *threatened* to post online or send others an image or video of an unwanted sexual experience that happened to me.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15.	Someone posted online or sent an image or video of an unwanted sexual experience that happened to me.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Module 3: Contact

The next questions ask about acts where your body was touched in sexual ways without your permission. Experiences where you were made to perform sex acts on others are also included. Here are common ways lack of permission is demonstrated:

Lack of permission for a sex act is communicated in many ways including, but not limited to:

You were unable or were given no chance to refuse.
You were incapacitated and could not stop what was happening.
You made excuses for or gave reasons why you couldn't do it.
You tried to convince the other person/persons to stop, pleaded, or cried.
You pushed them away, moved their hand off, tried to create physical distance, hit, or kicked.
You directly said "no" or "I don't want to."
You said yes to some sexual acts, but acts occurred that were not agreed upon.
You said yes to sex only with a condom or contraception, but acts occurred without protection.

Sex acts take many forms including:

- **Having non-penetrative sexual contact** includes being kissed or touched in a sexual way, having sexual parts of your body (breasts/chest, butt, crotch/genitals) stroked or grabbed. The act may or may not happen through your clothing. Sexual contact also includes making you touch these parts of someone else's body.
- **Having oral sex** is someone using their mouth, lips, or tongue to touch your penis, butt (anus) or crotch (genital area). Oral sex also includes incidents when someone made you use your mouth, lips, or tongue to touch their penis, anus (butt) or crotch (genital area).
- **Penetrating your vagina/genital opening** is someone putting their penis, fingers, a sex toy, or another object into your vagina or genital opening. This act involves penetration of your body. It DOES NOT include the anus (butt).
- **Making you penetrate their vagina/genital opening** involves someone making you penetrate their vagina or genital opening with your penis, fingers, a sex toy, or another object. This act involves making you penetrate someone else's body. It DOES NOT include the anus (butt).
- **Penetrating your anus** is someone putting their penis, fingers, a sex toy, or another object into your anus (butt). This act involves penetration of your body.
- **Making you penetrate their anus** is someone making you penetrate their anus (butt) with your penis, fingers, a sex toy, or another object. This act involves making you penetrate someone else's body.

If you want to see these definitions again later, hover the mouse over a term and the definition will pop-up. [If software capability does not permit this function or when administering in written format, instruct respondent to return to this page].

Since your 14th birthday, how many times has…		0	1	2	3	4	5	6	7	8	9	10+
16.	Someone bought me drinks or gave me strong drinks to make me impaired and unable to give permission or stop them so they could:											
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

		0	1	2	3	4	5	6	7	8	9	10+
17.	Someone took advantage of me after I drank alcohol by choice and became impaired and unable to give permission or stop them so they could:											
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

e.	Penetrate my anus	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
f.	Make me penetrate their anus	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

18.	Someone put drugs into my drink or misled me about the contents of pills, cigarettes, or powders to make me impaired and unable to give permission or stop them so they could:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

19.	Someone took advantage of me when I took drugs by choice and became impaired and unable to give permission or stop them so they could:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

20.	Someone gave no advance notice so I could not agree or object, including times when I was sleeping or semi-awake to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

21.	Someone threatened to physically harm me, someone close to me, or my pets to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

22.	Someone used any level of physical force such as holding me down with their body weight, pinning my arms, or other types of physical force to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

d.	Make me penetrate their vagina or genital opening	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
e.	Penetrate my anus	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
f.	Make me penetrate their anus	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

23.	Someone withheld information about their sexual infection status, lied about using birth control, or tampered with or removed a condom after agreeing to use one to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

24.	People in positions of authority could be bosses/supervisors, health care providers, counselors, teachers, coaches, religious leaders, youth group leaders, or criminal/legal personnel. Someone misused their position of authority over me to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

25.	Someone made me engage in sexual acts for money by using threats to limit my ability to meet life needs such as housing, misleading me into doing a job that involved sexual acts, or physically forcing me to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

26.	Someone used any of these behaviors such as abusing their authority, threatening or using bodily harm, or taking advantage of my incapacitation from drugs or alcohol, to have any of the following sex acts, but the attempted act did not happen. They *tried* to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

f.	Make me penetrate their anus	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Module 4: Verbal Pressure

These questions ask about sexual experiences that happened without your freely given permission. Freely given permission is absent when you are pressured to comply.

Since your 14th birthday, how many times has…		0	1	2	3	4	5	6	7	8	9	10+
27.	Someone pressured me by saying positive things such as complimenting me, making promises about the future, saying "I love you" or "just do this for me" to:											
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

28.	Someone pressured me by trying to wear me down by doing things such as asking over and over, pleading, sighing, or rolling their eyes to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

29.	This question does NOT include situations when you were too intoxicated to give permission for sex. Someone pressured me to drink more alcohol than I wanted by doing things such as buying me drinks or making very strong drinks to engage sex acts with me when I wouldn't have otherwise to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

30.	This does NOT include situations when you were too high to give permission for sex. Someone pressured me to use more drugs than I wanted by doing things such as buying or offering me drugs to engage sex acts with me when I wouldn't have otherwise to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

31.	Someone pressured me by criticizing, saying things such as, "don't be so uptight," "no one else would want you," "you led me on," or by questioning my sexuality to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

32.	Someone pressured me by threatening the relationship in some way such as threatening to break up with me, threatening to have sex with someone else, or questioning my commitment to the relationship to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

33.	Someone pressured me by threatening my social reputation, such as saying they would spread rumors about me, reveal private information, out me, or exclude me from social situations to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

34.	Someone pressured me by saying or doing something that reminded me about how they had been angry, threatening, aggressive, or violent in the past to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

35.	Someone pressured me by getting mad and by saying and doing things such as yelling, swearing, slamming things, or stomping around (but not using physical force) to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

36.	Someone pressured me by threatening my access to something important like my children, money, housing, food, healthcare, medications, or identification documents to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

37.	Someone pressured me by threatening to harm or kill themselves to:	0	1	2	3	4	5	6	7	8	9	10+
a.	Have non-penetrative sexual contact	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
b.	Have oral sex	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
c.	Penetrate my vagina/genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
d.	Make me penetrate their vagina or genital opening	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
e.	Penetrate my anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
f.	Make me penetrate their anus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Approximately, how long ago did your sexual assault experience occur?

a) Within the past year
b) 1 to 3 years ago
c) 3 to 5 years ago
d) 5 to 7 years ago
e) 7 to 9 years ago
f) More than 9 years ago

Appendix E

General Change Mechanisms Questionnaire (GCMQ; Wolff et al., 2024)

Here is a list of statements that may apply to your psychedelic experience. Please estimate the extent to which these statements applied to your **psychedelic experience(s) that incorporated the processing of your sexual assault(s)**.

The rating scale is as follows:
0 = Not at all
1 = A little
2 = Moderately
3 = Strongly
4 = Very Strongly
5 = Extremely

Problem Actuation
1. I relived painful or fearful memories.
2. I experienced feelings that I previously avoided.
3. I was confronted with my problems.
4. I could feel that my vulnerable spots were being touched upon.
5. I felt emotions that are related to my problems.

Resource Activation
6. I could see myself in a positive light.
7. I became aware of things that I am thankful for.
8. I felt connected to things that give my life meaning.
9. I felt in contact with my strengths.
10. I became aware of the beautiful things in my life.

Clarification
11. I gained a new understanding of the difficulties in my life.
12. It became clearer to me why I tend to react in certain ways to difficult situations.
13. It became clearer to me what the essence of my problems is.
14. I could see my problems in a new light.
15. I could understand my feelings on a deeper level.

Mastery
16. I made progress in coping with my problems.
17. I learned things that can help me handle different difficult situations.
18. I gained confidence in my ability to handle strong feelings.
19. I found new ways to deal with situations that have caused me problems in the past.
20. I learned about new and useful ways to act.

Appendix F

Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995)

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you in the last 30 days. There are no right or wrong answers. Do not spend too much time on any statement. The rating scale is as follows:

0 = Did not apply to me at all
1 = Applied to me to some degree, or some of the time
2 = Applied to me to a considerable degree, or a good part of 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 (eg, 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 (eg, 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

Validity Check: Please select “Always”

15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt that 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 G

Posttraumatic Stress Disorder Checklist for the DSM-5 (PCL-5; Blevins et al., 2015)

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the last 30 days as a result of your previous experience(s) of sexual assault. Rate the items on a following scale:

0 = not at all
1 = a little bit
2 = moderately
3 = quite a bit
4 = extremely

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
Validity Check: Please select option 3, “Moderately”.
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
10. Blaming yourself or someone else for the stressful experience or what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities that you used to enjoy?
13. Feeling distant or cut off from other people?
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
15. Irritable behavior, angry outbursts, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?
17. Being “superalert” or watchful or on guard?
18. Feeling jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

Curriculum Vitae

EDUCATION

Present	**Lehigh University**, Bethlehem, Pennsylvania Doctor of Philosophy in Counseling Psychology (APA Accredited) Advisor: Nic L. Johnson, PhD GPA: 3.970 / 4.000 Expected May 2026
2023	**Lehigh University**, Bethlehem, Pennsylvania Masters of Education in Human Development GPA: 4.000 / 4.000
2018	**University of Redlands Johnston Center for Integrative Studies**, Redlands, California Bachelor of Arts in Interpersonal and Social Psychology GPA: 3.916 / 4.000
2016	**Study Abroad Program**, Globalization, Tourism, and Development Mexico (Oaxaca), Guatemala, Cuba, University of Redlands, Department of Sociology

CLINICAL EXPERIENCE

Doctoral Psychology Intern, Naval Medical Center San Diego (NMCSD) — APA-Accredited
San Diego, California | September 2026 to present

Advanced Practicum Student, Dr. Todd P. Pizitz Clinical and Forensic Psychological Services
San Diego, California | June 2024 to present
Hours: Approximately 20 hours per week

- Train in and administer integrative forensic assessment batteries
- Assessment foci and assessments:
    - *Screening/brief batteries*: Modified Mini Mental State Exam; Mini Mental Status Exam; Personality Assessment Screener (PAS)
    - *Symptom/performance validity exams*: Personality Assessment Inventory (PAI)
    - *Personality assessments:* Personality Assessment Inventory (PAI); The Minnesota Multiphasic Personality Inventory (MMPI)
    - *Forensic measures:* Static-99R; Juvenile Sexual Offense Recidivism Risk Assessment Tool-II (JSORRAT-II)
    - *Intelligence measures:* Kaufman Brief Intelligence Test Revised (KBIT-2; 2nd Ed.); Montreal Cognitive Assessment (MoCA)
    - *Symptom checklist/emotional functioning assessments:* Brief Symptom Inventory (BSI); PTSD Checklist; Quality of Life Inventory; Symptom Checklist-90-Revised; Trauma Symptom Checklist; The Inventory of Problems-29 (IOP-29); The Adverse Childhood Experiences (ACE) Inventory
    - *Mood inventories:* Mood Disorder Questionnaire (MDQ); Beck Anxiety Inventory; Beck Depression Inventory (2nd Ed.); Generalized Anxiety Disorder (GAD-7); Patient Health Questionnaire (PHQ-9);
    - *Substance use inventories:* Alcohol Use Disorders Identification Test (AUDIT); Drug Abuse Screening Test (DAST-10)
- Learn assessment battery building
- Perform assessment scoring and data entry
- Integrate interpretation from objective test results into cohesive narrative
    - Complete in a 1-week timeline
- Complete clinical interview and assessments for court-mandated or attorney-referred individuals
- Complete comprehensive Mental Health Diversion (MHD) evaluations

- Provide individual weekly psychotherapy for individuals who are criminal justice involved (e.g., pre-trial/post-conviction)
- Provide court-mandated anger management individual psychotherapy
- Complete 90-day treatment plans that exhibit individuals long-term goals and avenues towards achieving goals (e.g., short-term SMART goals)
- Engage in monthly collateral updates with United States Probation Officers and United States Pretrial Officers
- Lead manualized Cognitive Behavioral Therapy (CBT) group centered on substance use and maladaptive behaviors on a weekly basis
- Collaborate with staff psychiatrist to provide high-quality care
- Participated in weekly clinical supervision through Dr. Todd D. Pizitz
- Participated in weekly group supervision through Dr. Todd D. Pizitz

Practicum Extern, Dynamic Counseling Associates
Lehigh Valley, Pennsylvania | July 2023 to May 2024
Hours: Approximately 12 hours per week

- Administer, interpret, and write assessments including comprehensive psychological, psychosexual, domestic violence
- Wrote evaluative reports to the Northampton County Court of Common Pleas answering referral question utilizing clinical interview and validated measures
- Provided individual adult and juvenile sex offender court-mandated individual treatment
- Provided individual domestic violence court mandated treatment
- Engage and present in weekly case conference and didactics with clinical staff
- Participated in weekly clinical supervision through Dr. Emily Salema and Dr. Jason Hunt

Practicum Extern, Northampton County Court of Common Pleas; Juvenile Justice Center
Easton, Pennsylvania | July 2023 to May 2024
Hours: Approximately 4 hours per week

- Led and co-led youth sex offender group treatment on a weekly basis
- Utilized Good Lives Matter (Ward, 2002) and Pathways (Kahn, 2023) models with client population
- Engaged in weekly clinical supervision through Dr. Emily Salema and Dr. Jason Hunt
- Engaged in weekly case consultation meeting with integrative team (e.g., case managers, program director, clinical staff)

Practicum Student, Lafayette College Counseling Center
Easton, Pennsylvania | August 2022 to May 2023
Hours: Approximately 16 hours per week

- Provided individual therapy services for a caseload of 8 to 10 clients from intake to termination
- Grounded services in evidenced-based interventions such as Acceptance and Commitment Therapy (ACT), Feminist, Gestalt, and Narrative Therapies
- Served as provider for walk-in Consultation Clinic (brief, Solution-Focused drop-in sessions)
- Prepared and facilitated professional development content on Identity Analysis Wheel (Worell & Remer, 2003)
- Developed an outreach program titled *Taking Care After Taking Care* for student leadership on campus
- Engaged and presented in weekly case conference and didactics with clinical staff
- Developed case conceptualizations and completed clinical documentation (Titanium) in a timely manner
- Participated in weekly clinical supervision through Dr. Asmita Pendse & Dr. Fallyn Lee
- Participated in weekly outreach supervision through Keiba Bragg-Best, MS, NCC, LCMHC, LPC
- Participated in weekly didactic training/supervision through Dr. Elizabeth Alogna

Practicum Student, North County Serenity House (Outpatient), HealthRight 360
Oceanside, California | January 2021 to May 2021
Hours: Approximately 10 hours per week

- Provided brief, time-limited individual therapy services for individuals in receiving outpatient dual diagnosis services
- Grounded services in evidenced-based interventions such as Motivational Interviewing
- Led a weekly dual-diagnosis substance use treatment group focused on women empowerment
- Completed clinical documentation in Welligent
- Participated in weekly case conference with support staff
- Participated in weekly supervision through Dr. Edina Martinez

HELPING EXPERIENCE

Doctoral Level Supervisor
Lehigh University, Bethlehem, Pennsylvania | August 2023 to May 2024
CPSYY476: Supervision and Consultation in Counseling and CPSY477: Supervision Apprenticeship
Supervisor: Dr. Bethany Detweiler

- Learned about established clinical supervision and consultation theories and practice
- Chose and established my supervision orientation and supervision style
- Supervised 2 masters level clinicians (counseling psychology and international school counseling) in fall 2021 and 1 in spring 2022
- Supervised international school counseling masters level trainees in Thailand, learning about legal and ethical guidelines for the field and specific to locations
- Received group supervision of supervision weekly from licensed psychologist
- Encouraged the growth of supervisees' theoretical orientation and conceptualization skills in their chosen orientation
- Promoted the development of self-reflection and reflection on transference and countertransference in supervisees' clinical work
- Encouraged multicultural humility and a social justice lens within supervisees' conceptualizations and clinical application
- Provided resources to further professional development of supervisees
- Assisted supervisees in working through ethical dilemmas and provided support in applying professional ethics guidelines from their professional standards (the American Counseling Association (ACA) and the American School Counseling Association (ASCA))

Substance Use Disorder (SUD) Counselor, North County Serenity House, HealthRight 360
Escondido, California | August 2019 to February 2021

- Acted as a Care Coordinator in a co-occurring residential treatment setting focused on gender-responsive and trauma-informed care
- Provided substance use specific counseling for a caseload of up to 17 clients
- Held clinical caseload groups focusing on relapse prevention, process, and coping skills
- Determine Level Of Care (LOC) Assessments and treatment plans for 90-day treatment episodes
- Participated in weekly staff meetings with integrative support staff (i.e., medical staff, clinicians, program director, case managers)

Group Counselor, North County Serenity House, HealthRight 360
Escondido, California | August 2019 to February 2021

- Facilitate clinical and psychoeducational groups in a dual diagnosis residential treatment program using a gender-responsive and trauma-informed model
- Responsible for documenting clinical notes
- Developing curriculum and practicing therapy models such as CBT, DBT, Motivational Interviewing and Relapse Prevention Therapy
- Counsel and create agenda for the following groups: LGBTQ, Seeking Safety, Psychoeducational Sex Group, Beyond Anger and Violence, Compassion, Self-Esteem, Positive Body Image, Writing To Heal, Healthy Relationships, Relapse Prevention, Surviving with Trauma

Mental Health Advocate, Private Contract

Boston, Massachusetts | May 2018 to October 2018

- Worked as an advocate for patient admitted to an inpatient treatment program
- Made regular (daily) visits to the patient and helped him adjust to the environment as well as setting up a plan for reaching expectations leading to release
- Assisted family of the patient with navigating the medical protocols and communicating with the patient and medical staff

Resident Assistant, University of Redlands, Johnston Center for Integrative Studies
Redlands, California | August 2017 to May 2018

- Completed on-duty shifts for 24-hour periods
- Provided crisis intervention support for students living in student housing
- Developed community engagement programming aimed at cultivating a living-learning community
- Practiced restorative justice in dealing with individuals and group behavior through evidenced-based restorative justice methods
- Attended monthly trainings
- Participated in weekly resident staff meetings
- Maintained documentation

RESEARCH EXPERIENCE

Dissertation Proposal Passed
Lehigh University, Bethlehem, Pennsylvania
Date: October 30, 2024
Title: *The Application of Emotional Processing Theory to the Healing Mechanisms of Naturalistic Psychedelic Use for Survivors of Sexual Assault*
Faculty Advisor: Nic L. Johnson, Ph.D.
Committee Members: Dr. Christopher Liang, Dr. Qiong Fu, Dr. Ann Fink

Qualifying Examination Presented
Lehigh University, Bethlehem, Pennsylvania
Date: October 3, 2023
Title: *Experiences of Non-Clinical Psychedelic Use on Trauma-Related Symptoms of Survivors of Sexual Assault*
Faculty Advisor: Nic L. Johnson, Ph.D.

The Resistance Lab
Lehigh University, Bethlehem, Pennsylvania | October 2020 to present
PI: Dr. Nic L. Johnson

- Member of feminist consciousness-raising research lab focused on ending gender based violence (GBV)
- Work with a diverse team of Masters, Doctoral, undergraduate students, and community members on proposals, programming, projects, and papers focused on feminist consciousness raising
- Provide mentorship and support to students in laboratory as they pursued their qualifier projects and other research
- Co-lead consciousness-raising gender based violence prevention programming for fraternity and sorority life organizations
- Co-facilitate a discussion of gender violence statistics to a group of undergraduates in training for Break The Silence, a gender violence prevention group
- Represent the laboratory at undergraduate events
- Recruit and mentor undergraduate research assistants
- Present research at various conferences
- Collectively create empirically supported programming and disseminating empirically based research projects

Research Assistant, Dr. Grace I. L. Caskie
Lehigh University, Bethlehem, Pennsylvania | August 2021 to May 2022

- Assisted faculty with various research projects
- Conducted literature reviews related to research on older adults, ageism, and minority stress model
- Organized prospective graduate student interview day and student meet-up prior to interview
- Cleaned data in SPSS
- Collected journal impact factor data

Research Assistant, Dr. Kathleen Silva, Ph.D., University of Redlands
Redlands, California | August 2017 to May 2018
- Collected data for a comparative crow and human study based on causal cognition and folk physics as it relates to human behavior: *Instruction and Task Size Affects The Tool Length Selected in a Stick-and-Tube Task*
- Completed literature review, informed consent, and statistical analysis
- Co-authored an addition to a previous studies findings

TEACHING EXPERIENCE

Teaching Assistant, CPSY 452: Helping Skills In International Settings
College of Education, Lehigh University | Summer 2022
- Observed and assisted Dr. Christopher Liang in curriculum development and teaching of intensive 8-day graduate-level Helping Skills course
- Developed and delivered a 4-hour lesson plan
- Attended and assisted course direction for 4-hour lesson plans for 8-day duration
- Provided feedback to students assignments, presentations, and helping skills simulations
- Provided resources for students interested in further graduate study in applied psychological fields

Council on International Educational Exchange (CIEE) Teacher
Chachoengsao, Thailand | October 2018 to March 2019
- Completed role as teacher for full term at Phanom Sarakham Phanom Adun Witthaya School
- Taught English and computer courses to secondary school population (e.g., ages 13-17)
- Developed curriculum and daily lesson plans
- Graded exams and coursework
- Participated in professional development with the teaching staff

Teaching Assistant, Department of Psychology, University of Redlands
Redlands, California | Fall 2018
- Assisted primary professor in the Research Methods course for psychology students
- Helped with grading student work, preparing for class, and teaching
- Supervisor: Dr. Kathleen Silva, Professor of Psychology

Co-Instructor, Johnston Center for Integrative Studies, University of Redlands
Redlands, California | May 2018
- Co-taught alongside primary instructor of an intensive lab course: *Psychology of Interpersonal Relationships*
- Facilitated experimentation designed to emphasize introspection, interpersonal relating, and personal risk-taking in the classroom environment
- Acted as point person for students to reach out to for advisement on course work and participation
- Supervisor: Fredric E. Rabinowitz, Professor of Psychology

Tutor, REACH (Read, Empower, Attain, Create, Hope) Juvenile Justice
San Bernardino, California | August 2014 to May 2016
- Led and co-led groups with incarcerated youth
- Created lesson plans for pre-approval including hands-on activity and academic curriculum
- Facilitated lessons to encourage reading, writing, and arithmetic
- Facilitated mindful discussions with class to reflect on skills and practices learned during activities

CONSULATATION

APA Men's Guidelines Workshop
Easton, Pennsylvania | 2024
- Led 90-minute workshop for clinical staff at community mental health clinic
- Contents included the American Psychological Association's Guidelines for for Psychological Practice with Boys and Men
- Provided "take-away" pamphlet to include in clinician's intervention toolbox

Sexuality and Gender Presentation
Easton, Pennsylvania | 2024
- Led 90-minute sex evidenced-based program in juvenile detention center for staff and participants
- Contents included up-to-date gender and sexuality literature
- Invited participants to engage in exercises to support content delivery

Gender Equity Panel for Soaring Together Scholars
Bethlehem, Pennsylvania | 2023
- Panel member for 27 first-year undergraduate students
- Panel questions and discussion surrounded the advancement of gender equity work through research and practice
- Provided contact information to provide ongoing support and open dialogue between panel and members

Parent Tree Program, United Way of Greater Lehigh Valley
Allentown, Pennsylvania | 2022
- Developed pre- and post-questionnaire for members of a parenting intervention
- Used empirically supported research and community participation to design effective needs and outcome assessment
- Participated in ongoing meetings to discuss aims and outcome of evaluation

Lafayette Student Organizations, Lafayette College Counseling Center
Easton, Pennsylvania | 2022
- Developed an evidenced-based program titled Taking Care After Taking Care on managing symptoms of distress in service-oriented roles
- Presented program to the Writing Center and Residence Life staff
- Engaged in needs assessment protocol and collected outcome data
- Provided materials to the Counseling Center for continued future use

Delaware Horticulture Center: Branches to Chances Re-entry Program
Bethlehem, Pennsylvania | 2021
- Co-developed a 12-week (4 month) ongoing behavioral health support group for the Branches to Chances re-entry program.
- Program grounded in trauma centered DBT and CBT.
- Topics included: distress tolerance skills, trauma-informed CBT, stress management, microaggression, life transitions
- Created pre/posttest assessments to evaluate program effectiveness.

Allentown Climate Council Par Initiative
Allentown, Pennsylvania | 2021
- Acted as a doctoral student consultant from Lehigh University's Counseling Psychology Program
- Met with local representatives (e.g., city council, mayor) to discuss climate initiatives in the Allentown City

SERVICE

Lehigh University College of Education Graduate Mentor
Bethlehem, Pennsylvania | 2022 to present

- Provided guidance, support, and mentorship to graduate students in the master's and PhD counseling psychology program
- Offered advice on course selection, practicum paths, and research opportunities to help mentees achieve their goals

Multicultural Resource Center (MRC) Finals De-Stress Social
Bethlehem, Pennsylvania | April 2024

- Co-organized an event for graduate students for finals week
- Worked alongside the International Student Support Outreach Coordinator to develop a space for graduate students to eat ice cream, socialize, and answer gratitude, self-care, meaning-making questions

International Student Lunar New Year Coordinator
Bethlehem, Pennsylvania | February 2024

- Organized group trip to Philadelphia, Pennsylvania to celebrate Lunar New Year for both domestic and international students
- Managed budget and allocating funds

Career Cafe
Bethlehem, Pennsylvania | March 2024

- Co-organized the event
- Worked alongside the International Student Support Outreach Coordinator to develop a space for international and domestic students to network and learn about career opportunities
- Invited guest speakers to enhance resource sharing among different organizations and increase access for students

College of Education Town Hall Meeting
Bethlehem, Pennsylvania | November 2023

- Co-organized town hall meeting
- Co-facilitated community discussion
- Developed report based on quantitative and qualitative data collected and presented information to the college leadership

ADDITIONAL ADMINISTRATIVE & WORK EXPERIENCE

Program Manager, United Way Greater Lehigh Valley
Lehigh Valley, Pennsylvania | August 2022 to present

- Develop programming on trauma-informed care, burnout, and compassion resilience to healthcare workers (i.e., caretakers, medical professional, frontline workers such as police officers, etc.) across the Lehigh Valley
- Coordinated meetings among various community partners
- Ensure that programming aligns with grant initiative
- Engage with community partners

Graduate Assistantship, **Multicultural Resource Center, Lehigh University, College of Education**
Bethlehem, Pennsylvania | August 2022 to present

- Manage a college-wide fund for students to receive support (i.e., conferences, studies, advocacy) with their research
- Document and disseminate program-related policies and procedures to all stakeholders in the College
- Monitor and approve all budgeted program expenditures
- Monitor program activities on a regular basis with accordance with the mission and goals of the College
- Create new programming to address diversity, equity, and inclusion

Graduate Assistantship, **Health Advancement and Prevention Strategies Office, Lehigh University**
Bethlehem, Pennsylvania | August 2021 to May 2022

- Promote healthy behaviors in undergraduate students through organizing and running substance-free university events that are data-drive and evidence-informed from multi-year data collection on the impact of late-night programming
- Run public health campaigns across undergraduate campus known as "InSTALLment" health promotion infographic development
- Work collaboratively on Lehigh After Dark committee with various Lehigh University Student Affairs staff and administrators
- Create and design advertisements for late-night, alcohol-free programs at Lehigh University

Graduate Student Senate (GSS), Lehigh University
Bethlehem, Pennsylvania | August 2021 to present

- Represented the College of Education: Counseling Psychology within the Graduate Student Senate.
- Collaborated with fellow representatives to address issues affecting the graduate student community.
- Participated in decision-making processes regarding funding allocation, campus policies, and student services.

Diversity, Equity, and Inclusion Committee, Lehigh University, College of Education
Bethlehem, Pennsylvania | November 2020 to present

- Student Representative on diversity committee
- Review grant applications
- Provide suggested initiatives for helping diversity committee accomplish its aims and objectives

Counseling Psychology Program Committee, Lehigh University, College of Education
Bethlehem, Pennsylvania | September 2020 to May 2021

- Counseling and Human Services Masters program student representative
- Represent the Master's program by being the liaison between student community and faculty community
- Meet with faculty and program-wide individuals to collaborate on program decisions and policies

Community Assistant (RA), University of Redlands
Redlands, California | August 2017 to May 2018

- Cared for the emotional, physical, and educational well-being of 200 students in a living-learning community
- Managed student mental health crises
- Served once a week fourteen hour on call shift, handling any emergency that arise
- Work with Residence Life & Housing Director, Johnston Center Director, Title IX
- Planned and facilitate programs for floor community
- Attended necessary meetings and in-service trainings

Disability Caretaker and Assistant, Tamara Hattis
Redlands, California | August 2017 to May 2018

- Provided assistance to professional writer with physical disability
- Arranged scheduling and transportation for public appearances and events
- Handled correspondence and communication with publishers and art community

Graphic Design Intern, Center for Diversity and Inclusion, University of Redlands
Redlands, California | August 2016 to May 2018

- Designed marketing collateral for campus events and promotions
- Worked with key stakeholders as clients to create integrated marketing communication
- Head designer for cultural and diversity events, creating inclusive messaging
- Designed within the Adobe Creative Suite (InDesign, Illustrator, Photoshop)

Johnston Admissions Intern, University of Redlands

Redlands, California | August 2016 to May 2018

- Responsible for student recruitment and arranging visits to campus
- Led campus tours for individuals and groups
- Presented to high school guidance counselors and teachers

Johnston Alumni Intern, University of Redlands
Redlands, California | August 2016 to May 2018

- Editor of the alumni newsletter (semester editions)
- Collaborate with PR team to create innovative content and design for the alumni newsletter

MANUSCRIPTS UNDER REVIEW

1. **Tschauner, M. E.**, Johnson, N. L. [Manuscript submitted for publication]. Survivors of Sexual Assault Report a Reduction in Trauma-related Symptoms Following Naturalistic Psychedelic Use.

2. Cadenas, G.A., Akoto, M., **Tschauner, M. E.**, & Liang, C.T.H. [Accepted book chapter]. Career Counseling for the Global Majority. *Learning to Create Career Interventions for Global Justice: A Critical and Reciprocal Education for Equality (CREE) Approach*.

3. Benner, M., **Tschauner, M. E.**, Johnson, N. L., Corbett-Hone, M. [Accepted book chapter]. Unnamed. *Military Sexual Trauma Through the Lens of Rape Culture*. Cognella Publishing.

4. Rabinowitz, F. E. & **Tschauner, M. E.** [in press]. Take it like a man. Depression and anxiety. In R. Mallo (Ed.). Men's Health in Primary Care: Promotion and Management.

MANUSCRIPTS IN PREPARATION

2. **Tschauner, M. E.**, Ahmed, S., Johnson, N. L. [Data analysis]. Queer and Trans People of Color's (QTPOC) Experiences Among the Greater LGBTQ+ Community.

3. **Tschauner, M. E.**, Johnson, N. L. [Submission preparation]. Institutional Betrayal.

4. Davison, K., Siepser, C., Zungu, S., **Tschauner, M. E.**, & Johnson, N. L. [Data collection]. Exploring nonbinary individuals' experiences with incarceration in the U.S.

SELECTED CONFERENCE PRESENTATIONS

1. Rabinowitz, F., **Tschauner, M. E.**, Salema, E. (2024). A *Strengths Based Approach to Working with Male Sex Offenders in a Group Psychotherapy Setting*. Skill-building Session accepted for the 2024 American Psychological Association (APA), Seattle, WA.

2. **Tschauner, M. E.**, Johnson, N. L. (2024). *Confirmatory Factor Analysis and Factorial Invariance of the Gay Community Involvement Index.* Poster presentation accepted for the 2024 American Psychological Association (APA), Seattle, WA.

3. **Tschauner, M. E.**, Gen, B., Johnson, N. L. (2024). *Experience of Non-Clinical Psychedelic Use on Trauma-Related Symptoms of Survivors of Sexual Assault.* Poster presentation accepted for the 2024 American Psychological Association (APA), Seattle, WA.

4. **Tschauner, M. E.**, Ahmed, S., Johnson, N. L. (2023). *Queer and Trans People of Color's (QTPOC) Experiences Among the Greater LGBTQ+ Community.* Paper presentation accepted for the 2023 Association of Women in Psychology Conference, Atlanta, GA.

5. **Tschauner, M. E.**, Ge Xu, Grace I.L. Caskie, Johnson, N. L. (2022). *Coming out and gender confirmation: A structured discussion on how to support older adult clients with marginalized gender and sexual identities in the process.* Roundtable discussion accepted for the 2022 Association of Women in Psychology Conference.

6. Caskie, G. I. L., **Tschauner, M. E.**, Root, E. Z. (2021). *Perceived impact of COVID-19 on older adults' mental health and barriers to mental health care.* Poster session presented at the annual meeting of the Gerontological Society of America, Virtual Session.

7. Davison, K., Siepser, C., Zungu, S., **Tschauner, M. E.**, & Johnson, N. L. (2021). Exploring nonbinary individuals' experiences with incarceration in the U.S. Paper presented at the Transgender Professional Association for Transgender Health (TPATH) conference, virtual July 2021.

8. Lipp, N., Credit, M., Johnson, N. L., Rizvi, Z., Mumtax, F., Saiyed, F., **Tschauner, M. E.** (2021). *Unsafe at home: Investigations into the effect of COVID-19 on domestic violence agencies in the U.S.* Poster session presented at the 2021 American Psychological Association Annual Convention, San Diego, CA, Virtual Session.

9. **Tschauner, M. E.**, Root, E. & Canell, A. E. (2020). *Creating conversations: A structured discussion on sexuality and intimacy in later adulthood.* Roundtable discussion submitted for the 2021 Association of Women in Psychology Conference, Virtual Session.

10. Corbett-Hone, M., Lipp, N., Benner, M., **Tschauner, M. E.**, & Adler, M. (2020). *#SaveWhoseChildren?: Combating Racial Injustice within the Current Anti-Sex Trafficking Cause through Feminist Anti-Racist Activism*. Roundtable discussion submitted for the 2021 Association of Women in Psychology Conference, Virtual Session.

JOURNAL PEER REVIEWER EXPERIENCE

2024	Co-reviewer with Dr. Nic L. Johnson *Journal of Psychology & Sexuality*

NON-ACADEMIC PUBLICATIONS

2021 – 2023	*InSTALLments*, designer and editor, newsletter
2015 – 2018	*Coz McNooz,* designer and editor, newspaper
2017 – 2018	*Mentone Special*, designer and editor, magazine

LECTURES, COMMITTEES, CONFERENCES

2025	College of Education Award Committee for Graduate Student Life Leadership Award Bethlehem, Pennsylvania
2024	American Psychological Association National Conference Seattle, Washington
2024	College of Education Website Redesign Committee Lehigh University, Bethlehem, Pennsylvania
2022	Association for Women in Psychology Annual Conference Chicago, Illinois
2021	Education Policy Committee, Lehigh University Student Representative from the College of Education
2018	Committee Leader, English Camp Committee and Conference Chachoengsao, Thailand
2017	University of Redlands, Redlands, California Council Member, Panel Organizer, Race On Campus Conference
2014 – 2018	Student Committee Member, Academic Policy Committee Johnston Center for Integrative Studies, University of Redlands, California
2016 – 2017	Director, Johnston Peer Council (Peer Restorative Justice Council), Johnston Center for Integrative Studies, University of Redlands, Redlands, California

2016 – 2017	Organizer, Ban the Box Calling Campaign, under the advisement of Dr. Jennifer Tilton University of Redlands, Redlands California
2014 – 2018	Council Member, Johnston Peer Council (Peer Restorative Justice Council) Johnston Center for Integrative Studies, University of Redlands, Redlands, California
2016	Student Representative, Hiring Committee for Public Safety Officer, University of Redlands, Redlands, California
2015	University of Redlands, Redlands, California Johnston Liaison Representative, Associated Students of the University of Redlands (ASUR)
2014	University of Redlands, Redlands, California Senator, Associated Students of the University of Redlands (ASUR)

TRAININGS AND CERTIFICATIONS

2024	Core Concepts & Techniques for Group Therapy Based Treatment of Adults Who Sexually Abuse Steven Sawyer, MSSW, LICSW
2023	STATIC-99R Keeping Current with Scoring & Interpretation, Robin J. Wilson, Ph.D., ABPP
2023	Motivational Interviewing and Psychedelics Assisted Therapy, Joshua Bringle, PhD
2023	Single-Session Therapy in a College Counseling Center, Monte Bobele, PhD, ABPP
2022	Microaggressions & Micro Interventions in Clinical Work & Everyday Lives, Dr. Cassandra Z. Calle, workshop
2021	Gender Inclusivity Training, Dr. Em Matsuno, Virtual Session
2020	Advocacy: From Reflection to Action, Natahlie Lynn, M.Ed., Virtual Session
2020	Lehigh University (LU) Ally Training, LGBTQ 101, Virtual Session
2019	California Substance Use and Alcohol Use Disorder Counselor Certified Counselor
2019	Trauma & Resilience Training, ECHO, Escondido, California
2019	Treatment Plan Documentation, HealthRight360, Escondido, California
2019	Nonviolent Crisis Intervention, HealthRight 360, Escondido, California
2019	Cultural Competence, RELIAS
2019	Motivational Interviewing, RELIAS
2019	Advocacy and Multicultural Care, RELIAS
2019	Abuse and Neglect: What to Look For and How to Respond, Escondido, California
2019	HIPAA Do's and Don'ts: Electronic Communication and Social Media, RELIAS
2019	Crisis Management, RELIAS, Escondido, California
2019	Substance Use Disorder Registered Counselor, CADTP
2019	Minding the Gap Master Class, BoldLeaders Institute, Online
2019	CPR & First Aid for Children and Adults, American Red Cross

HONORS, AWARDS, AND FELLOWSHIPS

2024	College of Education Graduate Student Leadership and Service Award
2024	College of Education Dean's Endowed Student Travel Scholarship
2024	Graduate Life Leadership Award
2024	College of Education Dean's Endowed Student Travel Scholarship
2023	College of Education Dean's Endowed Student Travel Scholarship
2022	College of Education Dean's Endowed Student Travel Scholarship
2021	Graduate Student Senate Travel Grant
2021	College of Education Dean's Endowed Student Travel Scholarship
2018	Mortar Board National Honor Society
2018	University of Redlands Senior of the Year, Nominee
2017	University of Redlands Maroon & Gray Scholars, Nominee
2017	University of Redlands Junior of the Year
2016	University of Redlands Sophomore of the Year, Nominee
2014	James O. Johnston Endowed Scholar
2014	College Essay Whiz Scholarship Contest Winner, "The Number"

2014 Recipient of the Presidential Scholarship Award
2013 National Representative for Bold Leaders, US State Dept. Uganda, Africa

PROFESSIONAL AFFILIATION

American Psychological Association (APA) — since 2023; Membership ID: C2204309116

- Division 17, Society of Counseling Psychology
- Division 35, Society of the Advancement of Feminist Psychologists

Association for Women in Psychology (AWP) — since 2020
Section for the Advancement of Women (SAW) — since 2022

REFERENCES

Dr. Emily Salema | Licensed Clinical Psychologist, Consulting Forensic Psychologist and Expert Witness
Relationship: Former Clinical Supervisor, Dynamic Counseling Associates
Contact: emily@esalemapsyd.com

Dr. Nic L. Johnson | Professor of Counseling Psychology, Lehigh University
Relationship: Current Academic Advisor/Former Graduate Assistant Advisor
Contact: nij316@lehigh.edu

Dr. Christopher T. H. Liang | Chairperson, Department of Education and Human Services, Lehigh University
Relationship: Former Teaching Advisor/Clinical Supervision Professor
Contact: ctl212@lehigh.edu

Dr. Fredric E. Rabinowitz | Professor of Psychology, University of Redlands
Relationship: Former Undergraduate Academic Advisor
Contact: fredric_rabinowitz@redlands.edu