

**Former and present military service members' perceptions of the use of psychedelic
substances for the treatment of mental health conditions**

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Abstract

Now more than ever, Americans are experiencing a serious mental health crisis. However, it can be asserted that veterans are even more in need of effective interventions to address mental health concerns. Veterans experience disproportionately high rates of anxiety, depression, substance abuse disorders, PTSD, and death by suicide. They often do not find significant symptom reduction from traditional mental health intervention methods. Psychedelics are re-emerging as an option for mental health treatment, however our knowledge of veterans' attitudes toward the use of psychedelics for treatment for various mental health conditions is currently limited. This work presents the results of an anonymous online survey distributed to veterans at a large public university in the Southern United States assessing their knowledge of and attitudes toward the use of psychedelics for mental health concerns. Results indicate that these veterans had a moderate level of knowledge concerning the use of psychedelic therapy. Results also indicate that overall veterans are in favor of the federal government funding further research of the medicinal value of psychedelics, and specifically further exploring the therapeutic benefits of psychedelics for various behavioral health concerns such as anxiety, treatment of trauma, and treatment of chronic pain. Implications for future research, practice, and policy are explored.

INTRODUCTION

Today, there is an ever-increasing need for effective mental health care, especially for the treatment of trauma. Complex Posttraumatic Stress Disorder (C-PTSD), anxiety disorders, and mood disorders are all on the rise because of the global COVID-19 pandemic (SAMHSA, 2021) and our daily responsibilities force our psyches to push past traumas that have not been addressed, or even acknowledged as traumas (SAMHSA, 2021, 2022). It is typical for trauma to be characterized as events that are often violent, dramatic, and emotionally, or psychologically scarring. However, a dangerous misconception is that trauma is defined by the event itself, rather, it is more up to an individual's specific conceptualization of, and response to, the events that determine their traumatic impact. What may be traumatic for one individual may not be for the next. Similarly, this is especially important to consider when it comes to the effectiveness of some treatments that work for some, but not for others.

Trauma and other mental health related conditions disproportionately impact the lives of military service members and service veterans. According to the Substance Abuse and Mental Health Services Administration, in 2020, nearly 1.3 million (6.7%) veterans were identified to have substance use disorders (SUD), 3.1 million (15%) were identified to have a mental health diagnosis, and over 2,121,000 veterans ages 18+ (22.8%) were identified to have both a SUD and a mental health diagnosis (SAMHSA, 2020). Moreover, Policy Research Associates identified the daily veteran suicide rate in 2022 to be almost 17 deaths by suicide per day (U.S. Department of Veteran Affairs, 2022; Vincent-Roller, 2022).

Due to the ongoing need for effective mental health treatment, a treatment approach that was previously labeled as illegitimate is once again being examined for its therapeutic benefits. Psychedelic therapy, the use of psychoactive hallucinogenic substances such as 3,4-methyl

enedioxymethamphetamine (MDMA), lysergic acid diethylamide (LSD) or ayahuasca, is an up-and-coming treatment that seems to be garnering large amounts of attention in the media. The use of psychedelics in therapy initially began in the 1950's until the Controlled Substances Act (1970) effectively halted any further progress and research on the therapeutic uses of psychedelic substances (Carhartt-Harris & Goodwin, 2017). Psychedelic therapy has shown promise in the treatment of depression (Carhartt-Harris et al. 2021; Davis et al. 2020), substance use disorders (Bogenschutz et al. 2015; Johnson et al. 2014), PTSD (Mitchell et al. 2021), and anxiety for patients facing terminal cancer (Griffiths et al. 2016; Grob et al. 2011; Ross et al. 2016; Tupper et al., 2015). Psychedelics are now also being considered for research on treatment of personality disorders like borderline personality disorder and cognitive disorders like dementia (Carhartt-Harris & Goodwin, 2017). Demonstrating a considerable amount of promise, psychedelics are positioned to potentially hold the key to effectively treating trauma and other mental health issues that do not respond to other intervention approaches (Carhartt-Harris & Goodwin, 2017).

Psychedelic therapy could help military service veterans and other individuals in need of behavioral health care better understand and address the underlying causes of pain, trauma, and distress. Potential benefits may include a greater sense of purpose, solidarity with others, and harmony with the environment. Successful treatment with psychedelic therapy may reduce feelings of disconnection, self-harm behaviors, and reliance on substances with high potential for abuse (George et al., 2022). The longitudinal effectiveness of single-dose psychedelic treatments may also offer an alternative to long-term pharmaceutical use. Psychedelic therapy could also potentially activate new ideas and innovation, potentially addressing cultural stagnation and conflicts. To elaborate, psychedelic therapy could possibly lead to a retooling of the mental health system to address distress while at the same time reaping economic benefits by reducing

comorbidities and burden to healthcare institutions (American Psychological Association, 2022). However, to determine the efficacy of this emerging therapy, further research such as large randomized controlled clinical trials are needed. Expansion of this area of research should also include establishment of best practices for implementation to determine appropriate treatment protocols, including dosages, set/setting, and adverse event management. Following the United Nations' convention in 1971, sanctioned use of psychedelics has been restricted strictly to research purposes. Growing numbers of "deaths of despair" (deaths attributed to suicide) as well as increasing diagnoses of drug and alcohol use disorders and substance related overdoses have finally created a depth of concern that only grows by the day (Carhartt-Harris & Goodwin, 2017). Evidence suggests that the rise in these "deaths of despair" extends across race, ethnicity, and gender groups as well as geographic location and generation (George et al., 2022), and are often exacerbated by conventional treatment approaches that only offer minimal impact on symptoms and long-term functioning. The need for effective treatments has initiated the slow re-establishment of credibility as it pertains to psychedelic substances. Accordingly, there is room to explore mental health treatments that are more "human centered," to address the underlying causes of distress, and support happy, flourishing lives for all (Carhartt-Harris & Goodwin, 2017).

Historical Uses of Psychedelics

Although psychedelics are typically associated with shamanism, ritual use of psychedelic substances have been noted with many hunter-gatherer cultures across the globe. However ritual use of psychoactive substances can be found throughout history, and not just in pre-historic times. Ancient Greek, Roman, and Minoan societies all have documented histories with these substances (Carhartt-Harris & Goodwin, 2017). For example, the Eleusinian Mysteries, required

ritual ingestion of kykeon, which may have included ergot fungi, containing LSD-like alkaloids (Samorini 2019; Wasson, Hofmann, and Ruck, 1978; Uvarov, 1817; George et al., 2022). Ancient American societies like the Maya also document use of mind-altering substances. Today, traditional/indigenous healers still engage in the practice of using psychoactive plants and fungi, regardless of mainstream approval (George et al., 2022). The push for development of new treatments has increased due to the emerging interest in non-traditional, holistic treatments. There is a high demand from both consumers and pharmaceutical companies for lower risk, more effective intervention approaches (George et al., 2022).

20th Century Uses of Psychedelic Substances

The timeframe for the beginning of the “psychedelic movement” is much debated, but notably the first synthetization of LSD was documented on November 16 in 1938 by Swiss chemist, Albert Hoffman (McClure, 2022). After synthesizing LSD from ergot fungus, Hoffman accidentally ingested the substance on April 16 in 1943, leading to a hallucinogenic experience. Three days later, he tested the LSD on himself, embarking on a disoriented bicycle ride, now known as Bicycle Day. The experience was characterized by vivid colors, changing objects, and a fear of imminent death. However, the following day, Hoffman woke up in a cheerful mood, noticing a brighter and more colorful world. Inspired by his personal encounter, he conducted further experiments to explore the potential uses of LSD (McClure, 2022).

Albert Hoffman's work with LSD had a significant impact across multiple professions, leading to the creation of “The Doors of Perception,” commonly considered a central text to the movement, written by Aldous Huxley in 1954 (Hartogsohn, 2021). Huxley's exploration of mescaline in "The Doors of Perception" delved into altered states of consciousness, perception, and the potential for profound insights. He emphasized the capacity of psychedelics to open the

"doors of perception" and offer glimpses into a broader reality, drawing connections to philosophical and artistic concepts. Huxley's reflections highlighted the transformative effects of psychedelics, their ability to unlock new perspectives, and the potential for a deeper understanding of ourselves and the world around us (Hartogsohn, 2021).

Hoffman and Huxley's work laid the foundation for the later psychedelic movement of the 1960's. The movement emerged from Harvard University, where Timothy Leary, Richard Alpert (Ram Dass), Huston Smith, and Andrew Weil formed the Harvard Psychedelic Club. They experimented with LSD and psilocybin, advocating against societal norms, and encouraging people to question established beliefs. Their unconventional teachings, summed up by Leary's phrase "turn on, tune in, drop out," led to their dismissal from Harvard but contributed to their gain in popularity during the countercultural movement of the 1960s, which also coincided with the sentiments of protest surrounding the Vietnam War (Joseph, 2015; Lattin, 2010). The Harvard Psychedelic Club's influence contributed to the "Summer of Love" in 1967 and further popularized LSD and other psychedelics (Love, 2017). Other notable figures who made significant contributions to the psychedelic movement, specifically with plant medicines, were Terrence McKenna, his brother Dennis McKenna, and Paul Stamets (Bauer, 2020; Landau, 2016; Thoricatha, 2015). Terrence McKenna's stoned ape theory suggests that the ingestion of psychedelic mushrooms by our early ancestors catalyzed higher levels of cognition and consciousness, potentially leading to the evolution of the human brain (Bauer, 2020).

The last important figure that should be noted in the modern psychedelic revolution is Maria Sabina, a Mazatec healer from Mexico known for her use of magic mushrooms. Her story can be used to highlight both the uses and history of abuses in the field. Sabina's encounter with R. Gordon Wasson, who later shared his experience with Albert Hoffman, contributed to the

international attention mushrooms and LSD received in the 1950s (Bragagnolo, 2023). However, the unintended consequences of Wasson's article and subsequent actions had a detrimental impact on Sabina and her community such as Sabina's multiple arrests due to accusations of dealing drugs, rejection by her community, and irresponsible and dangerous use of the mushrooms by tourists which eventually led to the international ban on mushrooms in the 1970s (Bragagnolo, 2023).

The implications of this early research are multi-faceted. First, it highlights the influence of these figures on the development and understanding of psychedelic substances, including their potential for therapeutic use, and expanding human consciousness. Their work paved the way for continued research into the therapeutic benefits of psychedelics in mental health treatment. However, it also sheds light on potential negative consequences that can arise from the misuse and exploitation of these substances. The story of Maria Sabina serves as a cautionary tale about cultural appropriation, the exploitation of indigenous knowledge, and the need to respect and incorporate BIPOC spiritual leaders and healers into the future of psychedelic healing. Sabina's experience emphasizes the importance of approaching psychedelic substances with respect, responsible use, and a focus on self-discovery and healing rather than solely for recreational purposes.

Furthermore, the criticisms surrounding the problematic use of psychedelic substances must be acknowledged. The historical context of misuse and the perception of psychedelics as mere "drugs" rather than potential therapeutic tools contribute to the obstacles faced in their broader acceptance and integration into mainstream medicine (Carhartt-Harris & Goodwin, 2017). Overall, the research implications of these stories and figures underscore the importance of responsible and culturally sensitive approaches to psychedelic research, recognizing and

honoring the contributions of indigenous healers, and exploring the therapeutic potential of these substances while addressing their historical misuse.

The War AND Drugs, and the War ON Drugs

American society's reaction to recreational substance use led to the creation of the Controlled Substances Act and the declaration of "War on Drugs", initiated by Richard Nixon in June of 1970 (Ortiz & Preuss, 2023). About a decade after Albert Hoffman's famous Bicycle Day, the CIA began conducting experiments on military personnel in their experiment known as Project MK Ultra. This experiment made use of LSD, electroshock, hypnosis, and other techniques to attempt to develop a mind control program before other countries were able to do so, as a part of the Cold War (Geppert, 2022, p. 398). Starting in the 1950s, the US government collaborated in conjunction "with pharmaceutical companies and research universities to develop LSD as part of a campaign for psychological warfare" (Geppert, 2022, p. 398). Even though this protocol was intended for use against opponents in combat, the ones who suffered the most were US service members, who were used to instead advance chemical warfare methods that would render enemies "mentally incapacitated"(Geppert, 2022, p.398). Psychiatrists who participated in this research openly raised concerns related to overlap and intersection of roles, disclosure protocol, and the impact of participants relationship to duty (Geppert, 2022; Smith, 2019).

Government investigations and academic studies have demonstrated that even those soldiers who voluntarily participated in research were not given enough information about the kind of research they would be doing, or the potential effects of participating in this research, like the experience of persisting flashbacks (Geppert, 2022). Research using LSD concluded in 1963 because the effects were so unpredictable, rather than due to ethical concerns. Like the "Tuskegee Trials" and other examples of research abuses that occurred during that time, when

MK Ultra with military service members was exposed, congressional investigations were initiated (Geppert, 2022; Ross, 2017). Studies conducted found that active-duty subjects who took LSD during MK Ultra experienced a variety of serious mental health symptoms. VA practitioners were then tasked to assist these service members in remediating the residual psychological effects. The MK Ultra experiment was absolutely riddled with human rights violations, as well as violations of ethical research considerations. The abuses enacted by the government itself would taint the field of psychedelic research for decades to come, substantially contributing to the problems that the field faces today (Geppert 2022; Ross, 2017). The abuses that the government enacted upon these service members contributed in part to psychedelics being labeled as Schedule I controlled substances (Geppert, 2022).

MK Ultra was far from the first time that any country experimented with substances to enhance performance. Amphetamines were notably used by the Germans, Japanese, and Allied soldiers during WWII (Mankin & Ehrenberg, 2019). The British also went to war over opiates with China twice, and Britain is complicit in the propagation of opiate use in South Asia as well as China, all so they could have access to their favorite substance, caffeinated tea. According to a Q&A conducted with Peter Andreas, a political scientist at Brown University, “we can’t understand the history of war without including drugs, and we can’t understand the role of drugs in society without including war” (Mankin & Ehrenberg, 2019).

According to Andreas, drugs are valuable commodities; wars are funded through drugs but are also essential for both relaxing and stimulating combatants (Mankin & Ehrenberg, 2019). Due to the nature of war, it is not surprising that soldiers often turn to substances to cope and that in these instances, governments frequently sanction their use. Substances can be used to calm nerves and boost morale and group cohesion. A perfect example is tobacco use. Group usage is a

central facet of tobacco use and is known to be used to calm the nerves as well as pass the time. Of course, the use of any substance is a double-edged sword; for example, because although it can act as an anesthetic and as "liquid courage" in the case of alcohol, it can also make soldiers "unreliable", "useless", and "self-destructive" (Mankin & Ehrenberg, 2019).

Turning the Tides of Public Opinion

Part of this shift can be attributed to the legalization of cannabis, currently legal for recreational use in 23 states and the District of Columbia (Hasan, 2023). The history of cannabis is nearly identical to that of psychedelics and is also considered a mild psychotropic drug depending on context. Cannabis has an extensive global cultural, social, and political history that continues to be a topic of discussion across contexts. However recent research demonstrating cannabis's therapeutic properties has assisted in rehabilitating the image of cannabis in the public eye. Benefits have been found to include reduced legal ramifications, alleviating pain, treating obesity, reducing social anxiety, managing Multiple Sclerosis symptoms, arthritis, asthma, and other immune diseases (Hasan, 2023). The validation of the benefits of cannabis use has contributed to the ongoing legalization movement. Changing attitudes towards both medical and recreational cannabis legalization could potentially be a contributing factor to the similar change in attitudes towards psychedelic substances. Unfortunately, the use of these substances has an inextricably linked connection with racist prohibition legislation, the failed drug war, and the curious task of being forced to legitimize themselves when compared with the arguably more severe effects of alcohol, opioid, and benzodiazepine use and misuse. However, if cannabis can make headway in the process of legalization, then it can be assumed that psychedelics could also achieve success in being seen as a potential treatment for those most vulnerable to mental health issues, such as U.S. veterans.

The history of psychedelics, their uses, within the context of our own government, has been extensively documented. The in-depth overview provided by the researcher is given with the intention of demonstrating the historical and cultural significance of psychedelics prior to the Controlled Substances Act, as well as to demonstrate the awareness of both the government's role in the potential applications of psychedelics, and the part the U.S. government played in the prohibition of their use. It can be argued that U.S. veterans should be given access to these medicines not just because of what they have done for our country, but also because of what our government has done *to* them. In a sense, access and availability to psychedelic therapy could potentially serve as a mode of reparation to the veterans and service men impacted by the government's use of psychedelics for the purposes of war, when they are best known for the healing they can potentially provide.

Overview of Psychedelic Therapies

Types of Psychedelic Substances

Following cessation of the psychedelic research conducted from the 1950s to the 1970s, psychedelics have been classified by the Drug Enforcement Administration as Schedule 1 substances, labeled as substances with no therapeutic benefit (Tupper et al., 2015). However, due to a cultural shift in drug control policy, resulting from the departure of the previous interpretation with which these substances were previously conceptualized, controlled studies have begun to assess the pharmacological and therapeutic properties to determine potential uses for a variety of health-related conditions.

“Classic” psychedelic substances include lysergic acid diethylamide (LSD), psilocybin, dimethyltryptamine (DMT), and mescaline (Schultse, 2001; Tupper et al., 2015). They exert primary activity as agonists at the 5-HT_{2a} receptor. Many of these substances are created from

naturally occurring chemicals that can be found in plants or fungi in nature. These flora have been used ritualistically throughout history, such as the ergot fungus (*Claviceps purpurea*) from Eurasia, morning glory (*Turbina corymbosa*) and peyote cactus (*Lophophora williamsii*) from Central and North America, and the ayahuasca brew (*Banisteriopsis caapi* and *Psychotria viridis*) from the Amazon (Schultse, 2001; Tupper et al., 2015). Entactogens, which include MDMA, function by releasing serotonin (Nichols, 1986). Other substances that have been documented to have psychedelic effects are ketamine (a dissociative anesthetic), scopolamine (an anticholinergic), and ibogaine (a substance with complex neuropharmacology) (Tupper et al., 2015).

Functional Mechanisms of Psychedelics

In the last decade, clinical trials have been approved for 3,4-methylenedioxy methamphetamine (MDMA), ketamine, lysergic acid diethylamide (LSD), psilocybin, and dimethyltryptamine (DMT) (George et al., 2022; Tupper et al., 2015). These substances have demonstrated "preliminary effectiveness" of these therapies in treating depression (Carhart-Harris et al. 2021; Davis et al. 2020), substance use disorders (Bogenschutz et al. 2015; Johnson et al. 2014), PTSD (Mitchell et al. 2021), and anxiety for patients facing terminal cancer (Griffiths et al. 2016; Grob et al. 2011; Ross et al. 2016; Tupper et al., 2015). New studies are beginning to examine the use of psychedelics for other conditions such as eating disorders, migraine and cluster headaches, and early dementia (Siegel et al. 2021).

While looking at the effectiveness of these substances for the treatment of mental health conditions, researchers have concurrently sought to identify mechanisms of action underlying such treatments (George et al., 2022). While classic psychedelics like psilocybin, LSD, and ayahuasca exert their primary effects via the serotonin 2A (5-HT_{2A}) receptor that is heavily

expressed throughout the cortex, other hallucinogenic compounds such as ketamine act on glutamatergic N-Methyl-D-Aspartate receptors, with both inducing neuroplastic changes that may lead to therapeutic benefits (Deyama and Duman 2020; George et al., 2022; Ly et al. 2018). Additionally, the classic psychedelics have been found to initiate a cascade of altered neural connectivity and blood-flow across brain regions including: the “default-mode network” (medial prefrontal cortex), posterior cingulate cortex, inferior parietal lobule, lateral temporal cortex, hippocampus, and precuneus), amygdala, thalamus, and claustrum. The occurrence of this new activity that follows a psychedelic experience disrupts established patterns of brain activity, altering a person’s perception of their fundamental sense-of-self (Barrett et al. 2020; George et al., 2022; Kraehenmann et al. 2015; Preller et al. 2018; Roseman et al. 2018 a,b).

Research indicates that the beneficial effects of these substances can be correlated with the profound and extraordinary experiences that are concurrent with feelings of communion with the world and others (George et al., 2022). These positive mood states are often lacking in individuals experiencing symptoms of depression, anxiety, or trauma. Research indicates that these inherent qualities of psychedelic experiences may be predictive of enduring shifts in mental health status over time (Bogenschutz et al. 2015; Garcia-Romeu et al. 2014; George et al., 2022; Griffiths et al. 2016; Roseman et al. 2018 a,b). Since mental health challenges are associated with difficulty in changing thought, feeling and behavioral patterns independently, the psychoactive feature that disrupts neurological encoding patterns provides a compelling approach for mental healthcare treatment (Carhart-Harris et al., 2014; George et al., 2022). Further, the mystical and inexplicable experiences that have characterized psychedelic journeys throughout human history have been shown to enhance "cognitive, emotional, and creative flexibility"(George et al., 2022, p. 894). These experiences can create an excellent and meaningful starting point for individuals to pursue

their own psychological healing. In combination with therapeutic practices integration focused on developing personal awareness and emotional realignment, these substances could prove to be a novel method of reconfiguring the brain to enable long-term relief (George et al., 2022, p. 894). Based on the potential for alleviation of mental health related symptomology, coupled with the disproportional risk and impact of trauma on past and current military members, the current study seeks to assess the attitudes, knowledge, and interest regarding psychedelic therapies in the military service and veteran population.

Importance of Context and Expertise in Administration of Psychedelic Substances

Regardless of the substances used ritualistically, recreationally, or for medical purposes, research has also indicated that the experience is heavily dictated by the mental state, preconceived expectations of the experience, and the environment in which the experience takes place (Nichols 2004,). For example, with regards to the use of psilocybin, research has demonstrated that the psychological state of the user up to 4 weeks prior can determine whether the user will experience intense anxiety responses or have a more positive inner experience (Hill 2013; Studerus et al. 2012).

It is therefore important to emphasize that across cultures, with regards to these substances, a culturally informed and trained healer/interventionist who can act as a guide, is essential to the success of these experiences (George et al., 2022). According to Guillermo Arrévalo, a Shipibo shaman who works in Pucallpa, Peru: “I have to organize my work around what the person accepts as their beliefs about what it is that has damaged them, the particular trauma involved. On this basis, I organize the psychological part of the person, which enables me to understand and to see the solution to their problem” (Dobkin de Rios 2005, p. 204 as cited in George et al., 2022). The role of the guides/therapists in these instances is not only to administer

the substance, but to also assist the patient in reintegrating their psyche after the experience to emphasize, across cultures, regardless of the substance, the use of a culturally educated healer to guide the patient is integral to the process (George et al., 2022; Prue 2013).

The relationship with clinical research juxtaposed with ancient rituals curated by shamans is difficult to imagine, but for the purposes of clinical research the user experience would have to be limited for the sake of conducting the research (George et al., 2022). However, that does not mean that indigenous knowledge should be completely discounted. Rather, effort should be made to integrate ancient knowledge with current scientific practices for the sake of the individuals seeking healing. Psychedelic healing demonstrates incredible potential for a wide variety of applications. The only limit on their potential is the limits that have been imposed on their testing and use. Those wishing to evaluate the use of psychedelic therapies for mental health conditions should count on intense, stringent training and certification that is required of therapists and other health care providers (George et al., 2022).

Informed psychedelic research and therapy in the future will successfully combine the use of culturally informed indigenous knowledge facilitated by a community member educated in the relevant medicine (healer) as well as the standardized emotional and behavioral models enacted to inform care by a licensed practitioner (George et al., 2022). Care provided would be fairly distributed, culturally sensitive, and accessible to people across socioeconomic class, race, gender, ethnic identification, and generational boundaries (George et al., 2022; Thrul & Garcia-Romeu, 2021). Veterans could especially benefit from therapy of this nature due to the very real need for accessible mental health care, but as an added benefit, could also potentially reconnect with themselves, their community, their cultures, and other identity aspects that are commonly rediscovered through the psychedelic healing experience.

Potential Physical and Mental Health Risks of Psychedelic Therapy

Use of hallucinogens causes no known withdrawal symptoms so the characterization of use and physical dependence that applies to other drugs of abuse does not apply here. That said, other diagnostic criteria including a pattern of pathological use, and the impairment of social or occupational functioning due to use lasting for at least one month (American Psychiatric Association, 2013). These criteria indicate that these substances still have a potential for misuse and subsequent impact on one's overall quality of life (Schlag et al., 2022). In the 2017 iteration of the SAMHSA National Survey on Drug Use and Health, it was estimated that up to 9% of psychedelic users may develop psychological dependence according to some studies, while lower rates are cited in other studies (SAMHSA, 2017). In the 2021 iteration of the National Survey on Drug Use and Health, any data about rates of dependence were absorbed into the general category of SUD diagnosis in the past year stated as 46.3 million people (16.5%) (SAMHSA, 2021); accurate rates cannot be interpolated without further specification. Current research indicates that since not all experiences are euphoric, and tolerance (which cannot be overcome by increasing dosing) develops quickly, there is a low risk of developing a Hallucinogenic Use Disorder (HUD) (Rucker et al., 2018; Schlag et al., 2022).

Harm to Self/Others

Emotional experiences can be magnified while under the effects of psychedelics, so as mentioned in a prior section, the set and setting in which they are administered is vital to the experience (Aday et al., 2021; Johnson et al., 2008; Schlag et al., 2022). In individuals who are unprepared or underestimate the intensity of the experience, there is potential for the unregulated ingestion of these substances to result in dangerous behavior. Although very rare, there are reports of people engaging in dangerous behaviors like jumping from buildings to end their lives

(Honyiglo et al., 2019; Keeler & Reifler, 1967). However, it is important to note that these occurrences are quite rare when compared to other psychoactive drugs, especially alcohol. Due to the sensational nature of these incidents, reports of occurrences are widely publicized, which continues to contribute to the heightened perception of their risks. Higher risk of harm is attributed to greater dosage, challenging emotional experiences following ingestion of these substances, as well as lack of physical comfort and social support (Schlag et al., 2022).

Challenging Experiences

Challenging, or 'bad trips' can cause feelings of fear, dysphoria, and paranoia. In Carbonaro et al.'s study (2016), 39% of responses rated a bad trip as one of the top 5 most challenging experiences of their lifetime; however, the degree of difficulty was positively associated with enduring increases in well-being. Due to lack of information in this area, further research is required to determine who is most at risk of challenging emotional experiences after ingesting psychedelics. Understanding the specific circumstances that lead to challenging 'trips' will have especially crucial implications for future research when it comes to clinical trials as well as application for developing harm reduction strategies (Schlag et al., 2022).

Psychosis and Suicidal Ideation

Although there have been extremely few documented cases of completed suicides following administration of psychedelics in clinical trials (Cohen, 1960; Chandler and Hartman, 1960; Davies, 1964; Malleon, 1971; Schlag et al., 2022), these cases are associated with neglect of set and setting, and lack of adherence to stringent modern research standards (Johnson et al., 2008; Malitz et al., 1960; Rinkel et al., 1960;). These adverse outcomes can typically be attributed to unethical research practices like restraining participants and administering high doses without proper oversight or consent (Smart et al., 1966). Though psychedelics themselves are being

considered to potentially treat the depressive symptoms of bipolar disorder, the inclusion of psychiatric screening to prevent/monitor triggering of manic episodes in individuals with histories of bipolar disorder and other non-specific psychotic episodes will be essential to minimizing this risk (Bosch et al., 2022; Mahmood et al., 2022; Morton et al., 2023; Schlag et al., 2022).

Hallucinogen Persistent Perception Disorder (HPPD)

Hallucinogen persisting perception disorder (HPPD) is typically characterized by perceptual distortions, or "flashbacks" months to years after initial use of the substance (Hermle et al., 2012). Although drug-free visual effects following the initial use of hallucinogenic substances has been documented in users (Baggott et al., 2011; Carhart-Harris and Nutt, 2010), these effects can be also caused by an interaction with other psychoactive substances and can occur in healthy individuals. Effects typically diminish in duration, intensity, and frequency over time (Strassman, 1984; Schlag et al., 2022). Although there are no identifiable risk factors for developing HPPD, there is a correlation between HPPD and individuals who recalled anxiety/panic reactions during the experience. Recollection of these reactions triggered episode-like symptoms observed in individuals with PTSD (Halpern and Pope 2003; Halpern et al., 2016; Schlag et al., 2022).

Potential Physical Health Risks

When ingested at standard doses, psychedelics are considered physiologically safe, but overdose deaths have occurred when large doses have been consumed or when psychedelics have been mixed with other drugs and/or alcohol (Dos Santos et al., 2012; Gable, 2004; Gasser et al., 2014; Nichols, 2004; Nichols and Grob, 2018; Schlag et al., 2022; Van Amsterdam et al., 2011). Older reports of overdose reactions and adverse health effects have typically been recorded in

individuals with underlying medical conditions (Cohen, 1960; Malleon, 1971). Psychedelics can induce short-term effects on heart rate, blood pressure, pupil size, and body temperature.

Physiological effects overall seem to be short-lived and typically resolve without lasting effects.

Serotonin syndrome has been documented when users take MAOIs or SSRIs in conjunction with psychedelics (Gillman, 2010; Malcolm & Thomas, 2021; Schlag et al., 2022).

Although psychedelics seem to be a promising treatment for a variety of mental health diagnoses, to determine true risks and effectiveness, prior research should be replicated according to current research standards. Criticisms of past research such as lack of appropriate controls, small numbers of participants, inappropriate statistical analyses, lack of follow up, biased samples, and small sample sizes should be incorporated into new iterations of past studies (Savage et al., 1966). Results and effects of past studies should not be ignored, but historical circumstances related to the oversight of this research should also be considered (Schlag et al., 2022).

While there is a low risk of negative side effects from psychedelic use for mental health treatment, the question must be asked: is there that much more risk involved with psychedelic treatment compared to the inherent side effect risks that come with the medications that are commonly prescribed to treat mental health diagnoses? The researcher would like to assert that the risk is comparable, if not lower, than that associated with typical medications used in the treatment of anxiety, depression, PTSD, SUDS, and more. That said, the risk of side effects from psychedelic therapy might pale in comparison to the potential benefits of therapy for the veterans desperate for relief from their mental health symptoms.

The Use of Psychedelics for Mental Health Conditions

Some of the mental health diagnoses that have been researched for potential therapeutic effects using psychedelics are anxiety, substance use disorders, PTSD, and depression (Tupper et al., 2015). Although most research for the time being consists of small-scale studies, some promising preliminary results have been found, warranting further clinical study.

Anxiety

In a small study conducted in Switzerland using LSD-assisted psychotherapy, minimal reductions in anxious symptoms that can be attributed to personality traits, but significant reductions in anxiety correlated with emotional responses as demonstrated (Gasser et al., 2014; Tupper et al., 2015). Results at one year follow-up indicated lasting therapeutic benefit as well as no adverse effects more than one day after LSD-assisted session (Gasser et al., 2014). Psilocybin has also demonstrated anti-anxiety effects in patients with terminal diagnoses. After several therapeutic sessions with pharmacological intervention, participants then did a within-subject cross over study in which participants either received an active placebo (niacin) or the experimental medication (.2mg of psilocybin) (Grob et al., 2011). Participants in both groups attended two therapy sessions a few weeks apart. Findings showed that the participants in the experimental group receiving the psilocybin had lowered anxiety and improved mood without clinically adverse effects (Grob et al., 2011).

Substance Use Disorders

In a meta-analysis, a suggested beneficial effect was found using psychedelics to treat addictions such as Alcohol Use Disorder (AUD)(Tupper et al., 2015). One research team recruited 10 participants with an active AUD, with no concurrent mental health diagnosis or other substance use disorder, to engage in psilocybin-assisted therapy (Bogenschutz et al., 2015). Participants received motivational enhancement therapy over 12 weeks supplemented by two

sessions at weeks 4 and 8 of either .3mg or .4mg of psilocybin at the time of administration. Following completion of the study, the average number of days spent drinking and average number of days spent heavily drinking were reduced by more than half (Bogenshutz et al., 2015). Some nausea and mild headaches were reported amongst some of the participants, but otherwise no lasting negative effects were reported following the administration of the psilocybin (Tupper et al., 2015).

Research has also been conducted on smoking cessation using psilocybin-assisted therapy (Johnson et al., 2014; Tupper et al., 2015). 15 participants who smoked a minimum of 10 cigarettes daily and had engaged in multiple unsuccessful cessation attempts were recruited to participate. Participants received cognitive behavioral therapy (CBT) before and after receiving the psilocybin treatments (doses were either 20 mg or 30 mg). The first psilocybin treatment given was on the date identified as the quit date by the participants. At the 6-month follow-up, 12 out of the 15 participants were verified to be abstinent from ingestion of nicotine, which was verified with carbon monoxide and urinary cotinine measures (Johnson et al., 2014). Higher and longer rates of smoking cessation were correlated with the presence of intense inner experience co-occurring with experiences characterized as having personal meaning and spiritual significance on psilocybin session days (Garcia-Romeau et al., 2014). Ayahuasca has also been determined to provide relief in substance use disorders ranging from alcoholism to cocaine use (Thomas et al., 2013; Tupper et al., 2015).

Posttraumatic Stress Disorder

Currently, there are studies investigating MDMA-assisted psychotherapy as well as psilocybin-assisted therapy to treat chronic treatment-resistant PTSD, to improve upon currently available treatments (Mitchell et al., 2021; Mithoefer et al., 2011; Tupper et al., 2015). Outcomes

have included a significant and continued reduction in PTSD symptoms indicated by the Clinician-Administered PTSD Scale (CAPS). From the pool of participants receiving the experimental MDMA treatment, 83% demonstrated reduced symptom severity of more than 30%, while some participants no longer met the criteria for PTSD following the experimental treatment (Mithoefer et al., 2011). A long-term follow up study indicated that 74% of patients still showed significant continued reduction of CAPS scores three and a half years later (Mithoefer et al., 2013; Tupper et al., 2015).

Depression

In a study conducted using ayahuasca, a significant reduction of up to 82% was produced up to 1, 7, and 21 days after administration using the Hamilton Rating Scale for Depression (Ham-D), the Montgomery-Asberg Depression Rating Scale (MADRS), and the Anxious-Depression subscale of the Brief Psychiatric Rating Scale (BPRS) (De Lima Osorio et al., 2015). Significant effects were not seen in the Young Mania Rating Scale (YMRS) (Muttoni et al., 2019).

Psilocybin was used in a study to examine the efficacy and safety of treatment on patients with treatment-resistant depression; for the purpose of the study, treatment-resistance was defined as having taken 2 adequate courses of antidepressants (Carhart-Harris et al., 2016; Muttoni et al., 2019). Quick Inventory of Depressive Symptoms (QIDS) and Snaith-Hamilton Pleasure Scale (SHAPS) scores significantly improved from baseline at 1 week up to 3 months later. Peak effects were seen 2 weeks later, with 58% of patients demonstrating effects at 3 month follow up.

John Hopkins has already conducted initial studies using psilocybin, but a follow up study using psilocybin-assisted therapy showed substantial and lasting antidepressant effects for

some patients with major depressive disorder (Gukasyan et al., 2022; Muttoni et al., 2019). The study involved 27 participants with a long-term history of depression, and after receiving psilocybin treatment with supportive psychotherapy, their depression severity remained low at 1, 3, 6, and 12 months after treatment. The researchers also reported significant decreases in depressive symptoms, with 75% of participants showing an initial response and 58% experiencing remission at the 12-month mark. The researchers suggest that psilocybin may be a promising therapeutic approach for depression, but caution that it should only be administered under carefully controlled conditions by trained clinicians and therapists. Further research is ongoing to explore the potential long-term efficacy of psilocybin treatment beyond 12 months (Gukasyan et al., 2022; Muttoni et al., 2019).

Promising results from these varied therapeutic methods have demonstrated reductions in symptoms in anxiety, depression, SUDs, and PTSD. Naturally then, veterans would be a logical therapeutic population that would immensely benefit from access to these therapies due to the high rates of occurrence of mental health diagnoses.

CURRENT STUDY

This work seeks to explore Texas student military service professionals' and veterans' knowledge of and attitudes toward the potential use of psychedelics for the treatment of a variety of mental health conditions that disproportionally impact those with a record of military service. LSD, psilocybin, and MDMA are once again gaining traction in research (Geppert, 2022). However, one of the most important differences is that these substances are not being used in combat but are being used with the intention of healing our service members instead (Geppert, 2022).

It is currently estimated that 68 % of military service personnel/veterans are impacted by treatment resistant depression and up to two thirds of veterans continue to meet PTSD criteria following diagnosis (Allen & Bray, 2022; Gelderen et al., 2020). Mental health diagnoses that do not respond to “traditional” treatment approaches leave many without symptom relief, impacting their social, academic, and emotional functioning. Accordingly, the unified goal of current research is to find new or previously tapped methods of healing for PTSD, SUD, depression, and suicide (Geppert, 2022). Given the historical, cultural, and political context of psychedelic use and subsequent research, *veterans are positioned to be a prime beneficiary from progression of this field of research*. Thus, the goal of the proposed study is to investigate student military service members and veterans’ knowledge of, and attitudes toward, the use of psychedelic substances to treat common mental health conditions which disproportionally impact those with a history of military service. The researcher hypothesizes that student veterans will hold overall have positive attitudes towards the use of psychedelics for mental health treatment and report moderate level of knowledge concerning the therapeutic uses of psychedelic substances for mental health treatment.

METHODS

Research Questions

This exploratory study seeks to answer the following 3 research questions 1.) What are the levels of knowledge that Texas veterans have about the use of psychedelics to treat mental health conditions? 2.) What are the attitudes that Texas veterans have about the use of psychedelics to treat mental health conditions? and 3.) Do participant attitudes differ based on demographic characteristics or prior experiences of mental health treatment?

Research Design

To identify attitudes and knowledge about the use of psychedelics with the Texas student veteran population, the research team will conduct a onetime cross sectional online survey of student military service members/veterans at the University of Texas at Arlington (UTA). Prior to data collection, this project was approved by the Institutional Review Board (IRB) at UTA.

Eligibility Criteria

To be eligible to participate in this study individuals must be 1.) age 18 or older, 2.) can read and write English at an 8th grade level, 3.) are currently serving in the United States military (any branch) or have received an honorable discharge from the United States military and 4.) must currently be enrolled at the University of Texas at Arlington.

Study Recruitment

A convenient sample of participants was recruited for this study. Following IRB approval, the research team contacted the veterans' services offices at the University of Texas at Arlington via email, asking that office to disseminate a copy of a survey on veterans' and military service members attitudes toward the use of psychedelic substance to address common mental health conditions to the students on their listserver. A copy of the survey that was to be administered was also included in the initial email.

Survey Administration

Once UTA veterans' services agreed to assist with recruitment, they were then sent a recruitment email and flyer to disseminate. The veterans' services office then sent the recruitment email to members of their listserver in early July 2023 and again in September 2023, which contains a QR code and link to the confidential online survey. To protect the privacy of potential participants, the research team did not have access to emails of those who are on these listservers. A copy of the recruitment flyer and email are included in Appendix A.

Survey Instrument

The survey, which was created on the Qualtrics secure online data collection tool consists of four parts: 1.) Eligibility screening, 2.) Consent document, 3.) Background/demographic questions and 4.) Modified version of the Attitudes Towards Hallucinogenic Drugs Scale (Wildberger et al., 2017). Once potential participants clicked on the study link, they were brought to the three eligibility screening questions asking them if they are over the age of 18, are currently serving or have served in the military, and if they are enrolled at UTA. If they answer “yes” to all three questions, they are then taken to the consent document. If they answer “no” to any of the survey questions, they are deemed ineligible to participate and thanked for their time. The consent document then presents the potential risks and benefits of participation and reminds participants that their participation is voluntary and that they may choose to withdraw from participation at any time without loss or penalty. Participants must select “Yes – I consent to participate in this study” to move forward to the demographic and background questions.

To minimize missing data, all survey questions required a response for the participant to move forward. However, all survey questions had the option of “prefer not to answer” so that the participant can choose to not provide a valid response but still move forward with the survey instrument. The demographic and background questions inquire about the participant’s age, ethnicity/race, gender identity, sexual orientation, if they have any children, what branch of the service they served in, if they are active duty, in the reserves or are a veteran, and years of service. Participants are then asked about experiences of trauma prior to their military service and while in the military. The next set of questions enquires about history of mental health symptoms such as persistent unwanted thoughts, and if they have ever been diagnosed with a mental health condition. Participants were then asked to indicate if they had gotten treatment to

address this mental health condition and were then asked to rate their satisfaction with the treatment they received.

Following the demographic/background questions, participants would have to click on a captcha indicating that they were not a robot to continue to respond to the survey. This option was added in to ensure that the survey was being answered by an actual human and not a bot, which is unfortunately common for online surveys. After these questions were answered, the participants were given a brief explanation of how psychedelic substances are defined for the purposes of this study. Following this explanation, a modified version of the Attitudes Towards Hallucinogenic Drugs Scale was used to assess knowledge and attitudes toward the use of psychedelics to address mental health conditions (Wildberger et al., 2017). Participants would then answer 13 questions concerning participants' knowledge of psychedelic substances, and their attitudes toward the use of these substances to treat various physical and mental health conditions, potential risks of psychedelic substance use and their attitudes towards the use of psychedelics for research purposes.

The original version of this measure used the term "hallucinogenic drugs" for questions such as "Hallucinogenic drugs can be a therapeutic tool for those with anxiety" (Q2), however, the researcher decided to change the language used in each of the questions from "hallucinogenic drugs" to "psychedelic substances" to minimize stigmatizing language which may bias reporting. In addition, Question 7 was changed from "Hallucinogenic drugs can be a therapeutic tool for those with severe mental disorders" to read "Psychedelic substances can be a therapeutic tool for those who have experienced trauma" as PTSD is one of the mental health concerns most experienced by military service members and veterans. For each of the 13 questions, participants ranked their level of agreement with each statement ranging from 1 = *strongly disagree* to 5 =

strongly agree. Data collection was ongoing until October 2023 with a target sample size of 100. The screening questions, consent form, and original and modified survey instruments are included as Appendix B.

Once the participant completed all the study measures, they could “opt in” to be entered into a drawing for one of three \$100 dollar Amazon gift cards and if they consented to be contacted by the PI about future research opportunities in this area. If they selected “yes” they would be brought to a separate survey where they could enter their contact information. Separating these questions which ask for identifying information in the form of phone numbers or email address from the survey itself acts as a further protective measure to ensure the anonymity of respondents. To further protect the identities of study participants, the PIs faculty advisor applied for an exception to written documentation of receipt of remuneration for human subjects’ participation (W-9 exemption), as this would be the only document collecting individually identifying information on study participants and would only identify those who “opted in” to the gift card drawing.

The PI’s faculty advisor downloaded the data from Qualtrics, and 3 email addresses of those who opted into the gift card drawing were selected at random to determine the winners of the Amazon gift cards. The financial administrator for the School of Social Work contacted the winners by email upon the conclusion of data collection to let them know that they won the gift card. The winners were instructed to reply to this email to provide them with a valid email address to send the e-gift card to. (included as Appendix C). Once the reply email was received the participant got an activation code for a \$100 Amazon e-gift card. If one or more of the winners of the random drawing did not respond to the email within 2 weeks, he/she is removed from the drawing and another winner will be selected.

Planned Data Analysis

All data analysis was conducted in SPSS by the PI and her faculty supervisor. Data was cleaned and checked for missingness and assumptions of normality. Descriptive statistics (counts and percentages) were calculated for all nominal data; means and standard deviations were calculated for all scale data. For the standardized measure of attitudes and knowledge, questions # 4 (Psychedelic substances can be addictive) and #10 (Psychedelic substances can be detrimental to one's mental health) were reverse scored, and then the scores on all questions are summed to determine a total scale score, with higher scores being indicative of higher levels of knowledge/more positive attitudes toward the use of therapeutic psychedelic substances. Internal reliability consistency (coefficient alpha) for this scale has been found to be acceptable in prior studies and for this study was calculated at $\alpha = .91$ indicating strong internal consistency reliability.

To answer research question #1, the answers to the question "I would say I am knowledgeable about psychedelic substances" were reported. To answer research question #2, the total scale score for the measure was reported. To answer research question #3, demographic characteristics were grouped (or dichotomized based on sample size) and an analysis of variance (ANOVA) or independent t-tests were performed for each survey question and for the total scale score. Examples of planned comparisons are the comparison of responses by gender, ethnicity, age range, branch of military service, prior experiences of trauma, prior mental health diagnosis and satisfaction with prior mental health treatment.

Results

The results section addresses the answer to the three research questions: 1.) What are the levels of knowledge that Texas veterans have about the use of psychedelics to treat mental health

conditions? 2.) What are the attitudes that Texas veterans have about the use of psychedelics to treat mental health conditions? and 3.) Do participant attitudes differ based on demographic characteristics or prior experiences of mental health treatment?

Description of Sample

Demographics of Participants who Completed Demographic Questions

Participants were asked to complete a set of demographics questions prior to the attitudes and perceptions measure. 199 individuals completed the informed consent document and answered at least one demographic question. 77 responses were removed from the final data set due to excessive missing data on the demographic questions, leaving 122 participants who completed the demographics questions. Some demographic data for participants is missing since the UTA IRB would not allow a required response to any of the survey questions. Thus, if a respondent wanted to skip a given question, they indicated “prefer to not answer” as their response. This approach minimized questions that were accidentally skipped and gives the researcher more information on if the question was merely “skipped” or if the participant was not comfortable answering the question. The results of the demographic questions are summarized in Table 1.

Table 1

Sociodemographic Characteristics of Participants who Completed Demographic Questions

| Categorical Variables | <i>n</i> | % |
|-----------------------|----------|------|
| Age Range | | |
| 21-29 | 47 | 38.5 |
| 30-39 | 37 | 30.3 |
| 40-49 | 30 | 24.6 |
| 50 and over | 7 | 5.7 |
| Prefer not to answer | 1 | 0.8 |
| Total | 122 | 100 |

| Categorical Variables | <i>n</i> | % |
|-----------------------------|----------|------|
| Ethnicity by category* | | |
| American Indian/ Indigenous | 8 | 6.6 |
| Asian/ Pacific Islander | 4 | 3.3 |
| Black/ African American | 20 | 16.4 |
| Hispanic/Latino/a/x | 34 | 27.9 |
| White/Caucasian | 70 | 57.4 |
| Prefer not to answer | 3 | 2.1 |
| Total | 139 | 100 |
| Sexual Orientation | | |
| Gay | 1 | 0.8 |
| Lesbian | 4 | 3.3 |
| Bisexual | 6 | 4.9 |
| Heterosexual | 87 | 71.3 |
| Prefer not to answer | 24 | 19.7 |
| Total | 122 | 100 |
| Gender Identity | | |
| Female | 37 | 16.7 |
| Male | 70 | 20.1 |
| Transmasculine | 1 | 26.4 |
| Non-binary | 1 | 36.8 |
| Prefer not to answer | 13 | 10.7 |
| Total | 122 | 100 |
| Parent Status | | |
| Parent | 64 | 52.5 |
| Non-parent | 57 | 46.7 |
| Prefer not to answer | 1 | 0.8 |
| Branch of Military | | |
| Army | 47 | 38.5 |
| Navy | 21 | 17.2 |
| Air Force | 27 | 22.1 |
| Marine Corps | 19 | 15.6 |
| National Guard | 11 | 9.0 |
| Coast Guard | 2 | 1.6 |
| Served in multiple branches | 6 | 4.9 |
| Current military status | | |
| Currently on active duty | 71 | 15.5 |
| Currently in the reserves | 68 | 56.0 |
| Identify as veteran | 50 | 10.9 |
| Prefer not to answer | 57 | 12.5 |
| Total | 122 | 100 |

| Categorical Variables | <i>n</i> | % |
|--|----------|------|
| Experience of trauma prior to military service | | |
| No | 64 | 52.5 |
| Yes | 51 | 41.8 |
| Prefer not to answer | 7 | 5.7 |
| Total | 122 | 100 |
| Experience of trauma during military service | | |
| No | 37 | 30.3 |
| Yes | 79 | 64.8 |
| Prefer not to answer | 6 | 4.9 |
| Total | 122 | 100 |
| Prior experience of persistent thoughts that caused ongoing stress | | |
| No | 20 | 16.4 |
| Yes | 100 | 82 |
| Prefer not to answer | 2 | 1.6 |
| Total | 122 | 100 |
| Current experience of persistent thoughts that cause ongoing stress | | |
| No | 28 | 23 |
| Yes | 88 | 72.1 |
| Prefer not to answer | 6 | 4.9 |
| Total | 122 | 100 |
| Ever received a mental health diagnosis like anxiety, depression or PTSD | | |
| No | 36 | 29.5 |
| Yes | 82 | 67.2 |
| Prefer not to answer | 4 | 3.3 |
| Total | 122 | 100 |
| Ever received treatment for mental health diagnosis | | |
| No | 16 | 13.1 |
| Yes | 73 | 59.8 |
| NA, never received diagnosis | 29 | 23.8 |
| Prefer not to answer | 4 | 3.3 |
| Total | 122 | 100 |
| Currently receiving treatment for mental health diagnosis | | |
| No | 30 | 24.6 |

| Categorical Variables | <i>n</i> | % | | |
|--|----------|------|-----------|-------|
| Yes | 59 | 48.4 | | |
| NA, never received diagnosis | 30 | 24.6 | | |
| Prefer not to answer/ error | 3 | 1.6 | | |
| Total | 122 | 100 | | |
| Level of satisfaction with current mental health treatment | | | | |
| Very unsatisfied | 4 | 3.3 | | |
| Unsatisfied | 15 | 12.3 | | |
| Neither unsatisfied nor satisfied | 17 | 13.9 | | |
| Satisfied | 26 | 21.3 | | |
| Very satisfied | 3 | 2.5 | | |
| Not applicable to me | 55 | 45.1 | | |
| Prefer not to answer | 2 | 1.6 | | |
| Total | 122 | 100 | | |
| Continuous variables | <i>n</i> | M | <i>SD</i> | Range |
| Years of military service | 115 | 7.57 | 5.07 | 1-33 |

Note: * = participants could self-identify more than one racial/ethnic category, thus results do not add up to 100%.

Sociodemographic Characteristics

There were 47 participants in the 21-29 age range (38.5%), 37 participants in the 30-39 age range (30.3%), 30 participants in the 40-49 age range (24.6%), 7 participants in the 50 and over age range (5.7%), and one participant that preferred not to answer (.8%). When asked if the participants identified as multiracial/multiethnic, 14 participants indicated they identified as such (11.5%), while the remaining 108 participants identified as single race/ single ethnicity (88.5%). By category, 8 participants identified as American Indian/ Indigenous (6.6%), 4 participants identified as Asian/Pacific Islander (3.3%), 20 participants identified as Black/African American (16.4%), 34 participants identified as Hispanic/Latino/a/x (27.9%), 70 participants identified as White/Caucasian (57.4), and three participants preferred not to answer (2.5%).

When asked about sexual orientation, one participant identified as gay (.8%), 4 participants identified as lesbian (3.3%), six participants identified as bisexual (4.9%), 87

participants identified as heterosexual (71.3%), and 24 participants preferred not to answer (19.7%). When asked about their gender identity, 37 participants identified as female (16.7%), 70 participants identified as male (20.1%), one participant identified as transmasculine (26.4%), one participant identified as non-binary (26.4%), and 13 participants preferred not to answer (10.7). When asked if they were parents, 64 participants identified themselves as parents (52.5%), 57 participants identified themselves as non-parents (46.7%), and 1 participant preferred not to answer (.8%).

Military Branches and Years in Service

When asked about what military branch they served in, 47 participants served in the Army (38.5%), 21 participants served in the Navy (17.2%), 27 participants served in the Air Force (22.1 %), 19 participants served in the Marine Corps (15.6 %), 11 participants served in the National Guard (9%), two participants served in the Coast Guard (1.6%), and six participants served in multiple branches (6% of the sample). These responses were not mutually exclusive as a number of participants reported serving in more than one branch of the military during their service careers. When asked about their service status, six participants identified as on active duty (15.5 %), 12 participants identified as in the reserves (10.3%), 97 identified as a veteran (83.6%), and one participant preferred not to answer (.8%). The mean number of years of military service was 7.57 years ($SD = 5.07$) and ranged from 1 to 33 years.

Experience of Trauma Prior to Service and During Service

Participants were asked if they experienced trauma prior to service. Example of traumatic experiences were included in the question to ensure the participants included information on all potentially relevant traumatic experiences/ 64 participants responded they did not experience any trauma prior to their military service (52.5%), 51 participants responded that

they had experienced trauma prior to their military service (41.8%), and 7 preferred not to answer (5.7%). When participants were asked if they experienced trauma *during* their time of service, 37 participants (30.3%) responded they did not, 79 participants responded that they had (64.8%), and six participants preferred not to respond (4.9%). When asked if participants had prior experience of persistent thoughts that caused them ongoing stress (which was a proxy measure for suicidal ideation), 20 participants indicated that they had not (16.4%), 100 participants indicated that they had experienced these persistent thoughts in the past (82%), and two participants preferred not to answer (1.6%). When asked if participants were *currently* experiencing persistent thoughts that caused them ongoing stress, 28 participants responded they were not (28%), 88 participants responded that they were (72.1%), and six participants preferred not to answer (4.9%).

Mental Health Responses

When participants were asked if they had ever received a mental health diagnosis such as anxiety, depression, or PTSD, 36 participants responded they had not (29.5%), 82 participants responded that they had (67.2%), and four participants preferred not to answer (3.3%). When participants were asked if they had ever received treatment for their mental health diagnosis, 16 participants responded they had not (13.1%), 73 participants responded that they had (59.8%), 29 participants responded that the question was not applicable/ no history of diagnosis (23.8%), and four participants preferred not to answer (3.3%). When participants were asked if they were currently receiving treatment for a mental health diagnosis, 30 participants responded they were not (24.6%), 59 participants indicated they were (48.4%), 30 participants responded that the question was not applicable/ no history of diagnosis (24.6%), and three participants preferred to not respond or gave an undeterminable response (1.6%). Participants were then asked about their

level of satisfaction with their current mental health treatment, four participants indicated they were very unsatisfied (3.3%), 15 participants indicated they were unsatisfied (12.3%), 17 participants indicated they were neither unsatisfied nor satisfied (13.9%), 26 participants indicated they were satisfied (21.3%), three participants indicated they were very satisfied (2.5%), 55 participants indicated that the question was not applicable to them (45.1%), and two participants preferred not to answer (1.6%).

Demographics of Participants Completing All Study Measures

Of the 122 participants who completed the majority of the demographic questions, 53 did not go on to complete the survey measure assessing their attitudes towards the use of psychedelic medications for the treatment of various health and mental health-related concerns. These results are summarized in Table 2.

Table 2

Sociodemographic Characteristics of Participants Who Completed All Study Measures

| Categorical Variables | <i>n</i> | % |
|--------------------------------------|----------|------|
| Age Range | | |
| 21-29 | 31 | 44.9 |
| 30-39 | 20 | 29 |
| 40-49 | 14 | 20.3 |
| 50 and over | 4 | 5.8 |
| Total | 69 | 100 |
| Identify as multiracial/ multiethnic | | |
| Multiracial/ multiethnic | 10 | 14 |
| Single race/ single ethnicity | 59 | 86 |
| Ethnicity by category | | |
| American Indian/ Indigenous | 5 | 7.2 |
| Asian/ Pacific Islander | 3 | 4.3 |
| Black/ African-American | 9 | 13 |
| Hispanic/Latino/a/x | 22 | 31.9 |
| White/Caucasian | 41 | 68.1 |
| Sexual Orientation | | |

| Categorical Variables | <i>n</i> | % |
|---------------------------------------|----------|------|
| Gay | 0 | 0 |
| Lesbian | 4 | 5.8 |
| Bisexual | 5 | 7.2 |
| Heterosexual | 48 | 69.5 |
| Prefer not to answer/ error | 12 | 17.5 |
| Total | 69 | 100 |
| Gender Identity | | |
| Female | 17 | 24.7 |
| Male | 42 | 60.9 |
| Transmasculine | 1 | 1.4 |
| Non-binary | 1 | 1.4 |
| Did not answer/ error | 8 | 11.6 |
| Total | 69 | 100 |
| Parent Status | | |
| Parent | 35 | 50.7 |
| Non-parent | 34 | 49.3 |
| Total | 69 | 100 |
| Branch of Military | | |
| Army | 28 | 40.6 |
| Navy | 9 | 13 |
| Air Force | 15 | 21.7 |
| Marine Corps | 12 | 17.4 |
| National Guard | 8 | 8 |
| Coast Guard | 1 | 1.4 |
| Served in multiple branches | 1 | 1.4 |
| Currently serving or veteran status | | |
| Currently on active duty | 5 | 7.2 |
| Currently in the reserves | 6 | 8.7 |
| Identify as veteran | 52 | 75.4 |
| Prefer not to answer | 6 | 1.4 |
| Experience of trauma prior to service | | |
| No | 34 | 49.3 |
| Yes | 33 | 47.8 |
| Prefer to not answer | 2 | 2.9 |
| Total | 69 | 100 |

Experience of trauma while serving

| Categorical Variables | <i>n</i> | % |
|---|----------|------|
| No | 19 | 27.5 |
| Yes | 47 | 68.1 |
| Prefer not to answer | 3 | 4.3 |
| Total | 69 | 100 |
| Prior experience of persistent thoughts that caused ongoing stress | | |
| No | 11 | 15.9 |
| Yes | 57 | 82.6 |
| Prefer not to answer | 1 | 1.4 |
| Total | 69 | 100 |
| Current experience of persistent thoughts that cause ongoing stress | | |
| No | 14 | 20.3 |
| Yes | 51 | 73.9 |
| Prefer not to answer | 4 | 5.8 |
| Total | 69 | 100 |
| Received a mental health diagnosis like anxiety, depression or PTSD | | |
| No | 21 | 30.4 |
| Yes | 46 | 66.7 |
| Prefer not to answer | 2 | 2.9 |
| Total | 69 | 100 |
| Received treatment for mental health diagnoses | | |
| No | 13 | 18.8 |
| Yes | 38 | 55.1 |
| NA, never received diagnosis | 16 | 23.2 |
| Prefer not to answer | 2 | 2.9 |
| Total | 69 | 100 |
| Currently receiving treatment for mental health diagnosis | | |
| No | 19 | 27.5 |
| Yes | 31 | 44.9 |
| NA, never received diagnosis | 17 | 24.6 |
| Prefer not to answer/ error | 2 | 3.2 |
| Total | 69 | 100 |
| Level of satisfaction with current mental health treatment | | |
| Very unsatisfied | 2 | 2.9 |
| Unsatisfied | 6 | 8.7 |

| Categorical Variables | | <i>n</i> | % | |
|-----------------------------------|----------|----------|-----------|-------|
| Neither unsatisfied nor satisfied | | 7 | 10.1 | |
| Satisfied | | 18 | 26.1 | |
| Very satisfied | | 3 | 4.3 | |
| Not applicable to me | | 33 | 47.8 | |
| Total | | 69 | 100 | |
| Continuous variable | <i>n</i> | M | <i>sd</i> | Range |
| Years of Military Service | 65 | 7.06 | 4.55 | 1-33 |

Note: * = participants could self-identify more than one racial/ethnic category, thus results do not add up to 100%.

Independent t-tests were performed for continuous variables and chi-squared tests for independence were performed for categorical variables to determine if the sample of participants completing all study measures were significantly different than those who only completed the demographic questions. Results indicate no differences between these groups based on sociodemographic experiences, experiences of trauma, or experiences of treatment.

Sociodemographic Characteristics

Ages of participants completing demographic and attitude measures ranged from 21-50 and over. There were 31 participants in the 21-29 age range (44.9%), 20 participants in the 30-39 age range (29%), 14 participants in the 40-49 age range (20.3%), and four participants in the 50 and over age range (5.8%).

When asked if the participants identified as multiracial/multiethnic, ten participants indicated they identified as such (14%), while the remaining 59 participants identified as single race/ single ethnicity (86%). By category, 5 participants identified as American Indian/ Indigenous (7.2%), 3 participants identified as Asian/Pacific Islander (4.3%), 9 participants identified as Black/African American (13%), 22 participants identified as Hispanic/Latino/a/x (31.9%), and 41 participants identified as White/Caucasian (68.1%).

When asked about sexual orientation, four participants identified as lesbian (5.8%), five participants identified as bisexual (7.2%), 48 participants identified as heterosexual (69.5%), and 12 participants preferred not to answer (17.5%). When asked about their gender identity, 17 participants identified as female (24.7%), 42 participants identified as male (60.9%), one participant identified as transmasculine (1.4%), one participant identified as non-binary (1.4%), and eight participants preferred not to answer (11.6%). When asked if they were parents, 35 participants identified themselves as parents (50.7%) and 34 participants identified themselves as non-parents (49.3%).

Military Branches and Years in Service

When asked about what military branch they served in, 28 participants served in the Army (40.6%), nine participants served in the Navy (13%), 15 participants served in the Air Force (21.7%), 12 participants served in the Marine Corps (17.4%), eight participants served in the National Guard (8%), one participant served in the Coast Guard (1.4%), and one participant served in multiple branches (1.4% of the sample). When asked about their service status, five participants identified as on active duty (7.2%), six participants identified as in the reserves (8.7%), 52 identified as a veteran (75.4%), and one participant preferred not to answer (1.4%). The mean number of years of military service was 7.06 years ($sd = 4.55$) and ranged from 1 to 33 years.

Experience of Trauma Prior to Service and During Service

When participants were asked if they experienced trauma prior to their military service, 34 participants responded they did not (49.3%), 33 participants responded that they had (47.8%), and two preferred not to answer (2.9%). When participants were asked if they experienced trauma during their time of service, 19 participants responded they did not (27.5%), 47

participants responded that they had (68.1%), and three participants preferred not to respond (4.3%). When asked if participants had prior experience of persistent thoughts that caused them ongoing stress, 11 participants indicated that they had not (15.9%), 57 participants indicated that they had experienced these types of thoughts (82.6%), and one participant preferred not to answer (1.4%). When asked if participants were currently experiencing persistent thoughts that caused them ongoing stress, 14 participants responded they were not (20.3%), 51 participants responded that they were (73.9%), and four participants preferred not to answer (5.8%).

Mental Health Responses

When participants were asked if they had ever received a mental health diagnosis such as anxiety, depression, or PTSD, 21 participants responded they had not (30.4%), 46 participants responded that they had (66.7%), and two participants preferred not to answer (2.9%). When participants were asked if they had ever received treatment for their mental health diagnosis, 13 participants responded they had not (18.8%), 38 participants responded that they had (55.1%), 16 participants responded that the question was not applicable/ no history of diagnosis (23.2%), and two participants preferred not to answer (2.9%).

When participants were asked if they were currently receiving treatment for a mental health diagnosis, 19 participants responded they were not (27.5%), 31 participants indicated they were (44.9%), 17 participants responded that the question was not applicable/ no history of diagnosis (24.6%), and two participants preferred to not respond or gave an undeterminable response (3.2%). When participants were asked about their level of satisfaction with their current mental health treatment, two participants indicated they were very unsatisfied (2.9%), six participants indicated they were unsatisfied (8.7%), seven participants indicated they were neither unsatisfied not satisfied (10.1%), 18 participants indicated they were satisfied (26.1%),

three participants indicated they were very satisfied (4.3%), and 33 participants indicated that the question was not applicable to them (47.8%).

Descriptive Statistics for the Study Measures

Table 3 shows each of the questions included in the attitude measure, along with the means, standard deviation and range of response for each question. The question on which participants responded most favorably was Question 6: psychedelics should be studied for their medicinal value with a mean score of 4.41 ($SD = .86$) and the question on which participants responded least favorably was Question 1: psychedelics can be addictive with a mean of 3.43 ($sd = 1.1$).

Table 3

Descriptive Statistics for Attitudes Toward Use of Psychedelics Scale

| Survey Question | n | Mean | sd | Mode | Range |
|--|----|------|-----|------|-------|
| I am knowledgeable about psychedelic substances (Q1) | 69 | 3.59 | 1.1 | 4 | 1-5 |
| Psychedelics can be a therapeutic tool for those with anxiety (Q2) | 69 | 3.86 | 1.0 | 4 | 1-5 |
| Psychedelics can be a therapeutic tool for chronic pain (Q3) | 69 | 3.72 | 1.1 | 4 | 1-5 |
| Psychedelics can be used as a therapeutic tool for those with substance use disorders (Q4) | 69 | 3.57 | 1.2 | 4 | 1-5 |
| Psychedelics can be harmful to one's health (Q5) | 69 | 3.36 | .99 | 3 | 1-5 |
| Psychedelics should be tested for their medicinal value (Q6) | 69 | 4.41 | .86 | 5 | 1-5 |
| Psychedelics can be a therapeutic tool for those that have experienced trauma (Q7) | 69 | 3.86 | 1.1 | 5 | 1-5 |
| Psychedelics can be a therapeutic tool to aid in smoking cessation (Q8) | 69 | 3.41 | 1.1 | 3 | 1-5 |

| | | | | | |
|---|----|-------|-----|---|-------|
| Psychedelics can be a safely enjoyed when used recreationally, much like alcohol or nicotine (Q9) | 69 | 3.48 | 1.2 | 4 | 1-5 |
| Psychedelics can be a therapeutic tool for those with migraine headaches (Q10) | 69 | 3.45 | 1.1 | 4 | 1-6 |
| Psychedelics can be addictive (Q11) | 69 | 3.43 | 1.1 | 4 | 1-5 |
| Psychedelics can be a therapeutic tool for those with depression (Q12) | 69 | 3.86 | 1.1 | 4 | 1-6 |
| The federal government should fund studies to explore medicinal uses of psychedelics (Q13) | 69 | 4.35 | 1.0 | 5 | 1-5 |
| Total scale score on the measure | 68 | 43.03 | 9.1 | 4 | 16-58 |

Results for Research Question 1

To answer research question # 1 concerning the participants' overall knowledge concerning the use of psychedelic substances for treatment of health and mental health concerns, the mean score for Question 1 of the measure, *I would say that I am knowledgeable about psychedelic substances* was used. The mean items score for this question was 3.59 with a *sd* of 1.1, with scores ranging from between 1-5, indicating that participants had a moderate level of knowledge concerning the use of psychedelic therapy.

Results for Research Question 2

To answer research question #2 concerning the participant's overall attitudes towards the use of psychedelic substances for the treatment of physical and mental health conditions, the sum of the 13 questions on the attitude measure (Questions 5 and 10 were reverse scored) were summed to obtain a total scale score. These results are presented above in Table 3. The mean score was 43.03 (*sd* = 9.1) and scores ranged from 16 to 68, out of a total minimum score of 13

| | | | | | | | | | | | | | |
|--|--|--|--|---|---|---|--|--|---|---|---|--|---|
| | | | | | | | | | | | | | |
| Under 30 vs. 30 and over | | | | | | | | | X | | | | |
| Under 40 vs. 40 and over | | | | | X | | | | X | | | | |
| Have a history of mental health treatment vs. no | | | | X | | X | | | | X | X | | X |

Table 4

Bivariate Comparisons Based on Respondent Sociodemographic Characteristics

Female vs. Male Respondents

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether the respondent identified as a female vs. as a male. Results indicated that there was a significant difference in responses to the following questions: psychedelics can be a therapeutic tool for those with substance disorders, $t(67) = -1.82, p = .04, g = .52$, psychedelics should be studied for their medicinal value, $t(67) = -2.22, p = .02, g = .63$, and that psychedelics can be used recreationally like alcohol or nicotine, $t(67) = -1.86, p = .04, g = .53$. These results demonstrated that respondents who identified as males were more likely to respond positively that they thought psychedelics could be a therapeutic tool for substance use disorders, should be studied for their medicinal value, and could be used recreationally like alcohol and nicotine, and the magnitude of the effect size was moderate.

Comparison of Under 30 years of age VS. Over 30 years of age

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on the participants' age (under 30 vs. those 30 and older). Results indicate that there was a significant difference in responses to the question if the respondents thought that psychedelics could be used safely and recreationally, $t(67) = 1.82, p = .04, g = .43$. Participants under the age of 30 were more likely to respond that they thought psychedelics could be used recreationally, and the magnitude of the effect size was moderate.

Similarly a significant difference in responses was found for if participants thought psychedelics could be used as tools to treat depression, $t(67) = 1.42, p = .08, g = .34$.

Participants under the age of 30 were more likely to respond that they felt that psychedelics could be used safely and recreationally than respondents over the age of 30, and the magnitude of the effect size was minimal (small).

Comparison of Under 40 years of age vs. 40 years of age and Older

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on the participants' age (under 40 vs. those 40 and older). Results indicate that there was a significant difference in responses to the question if the respondents thought that psychedelics could be harmful to one's mental health, $t(67) = -2.15, p = .02, g = .58$. Participants over the age of 40 were more likely to respond that they thought psychedelics could be harmful to one's mental health, and the magnitude of the effect size was moderate. Similarly, a significant difference in responses was found for the question asking if participants thought psychedelics could be used safely and recreationally, $t(67) = 2.18, p = .02, g = .59$. Participants under the age of 40 were more likely to respond that they felt that psychedelics could be used safely and recreationally than respondents over the age of 40, and the magnitude of the effect size was moderate.

White VS. BIPOC Participants

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether the participants identified as either white or Black, Indigenous, or a person of color (BIPOC). Results indicate that there was a significant difference in responses to the following questions: whether they agreed that psychedelics could be used to treat anxiety, $t(67) = -2.44, p = .01, g = .54$, whether they agreed that psychedelics

could cause harm to one's mental health, $t(67) = -1.99, p = .03, g = .48$, whether they agreed psychedelics had medicinal value, $t(67) = -2.15, p = .02, g = .52$, whether they agreed that psychedelics could be used to treat trauma, $t(67) = -2.22, p = .02, g = .54$, whether they agreed psychedelics could be used to treat migraines, $t(67) = -1.83, p = .04, g = .59$, whether they agreed that psychedelics could be addictive, $t(67) = -1.51, p = .07, g = .37$, whether they agreed psychedelics could be used to treat depression: $t(67) = -1.85, p = .04, g = .45$, whether they agreed the federal government should fund studies to explore the medicinal uses of psychedelics, $t(67) = -2.24, p = .01, g = .54$, and the total scale score on the measure: $t(67) = -1.96, p = .03, g = .96$. White participants were more likely to respond positively that psychedelics could be used to treat anxiety, had medicinal value, could be used to treat trauma, could be used to treat migraines, could be used to treat depression, that the federal government should fund studies on psychedelics, and had higher scores overall. BIPOC participants were more likely to agree that psychedelics could be harmful to mental health and that they could be addictive. The magnitude of the effect sizes were moderate.

LGBTQ+ Participants vs. Non-LGBTQ+ Participants

Questions concerning sexual orientation and gender identity were aggregated into a new variable indicating that the respondent identified as part of the LGBTQ+ community. All those who responded that they were something other than cisgender or heterosexual were coded as LGBTQ+. Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether the participants identified as non-LGBTQ+ or identified as LGBTQ+. Results indicate that there was a significant difference in the responses to the following questions: that respondents agreed that psychedelics should be tested for their medicinal value, $t(67) = -1.69, p = < .001, g = .72$, that psychedelics could be used recreationally

$t(67) = -1.8, p = .04, g = .77$, and thought psychedelics could be addictive) $t(67) = -1.73, p = .05, g = .74$. Participants who identified as LGBTQ+ were more likely to respond that they agreed psychedelics should be studied for their medicinal value, and that they could be used recreationally like alcohol or nicotine but were more likely to disagree that psychedelics could be addictive, all with moderate effect sizes.

Active Duty VS. Veteran Status Participants

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether the participants were currently on active duty or were veteran status. Results indicate that there was a significant difference in responses to the question if the respondents thought that psychedelics could be harmful to one's mental health, $t(67) = -1.83, p = .04, g = .60$. Participants that identified themselves to be veteran status were more likely to respond that they did not think psychedelics could be harmful to one's mental health relative to those who were still on active duty, and the magnitude of the effect size was moderate.

No Trauma Reported Prior to Military Service VS. Reported Trauma History

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether the participants reported having experienced trauma prior to their military service. Results indicate that there was a significant difference in responses to the following questions: if the respondents thought that psychedelics could be a therapeutic tool for those with chronic pain: $t(67) = -2.04, p = .02, g = .50$, if they thought that psychedelics should be tested for their medicinal value: $t(67) = 1.80, p = .04, g = .43$, if they thought psychedelics can be used as a therapeutic tool for those who have experienced trauma: $t(67) = -1.72, p = .05, g = .42$, if they thought that psychedelics can be a therapeutic tool for

those with migraine headaches, $t(67) = -1.51, p = .07, g = .36$, if they agreed that psychedelics can be addictive, $t(67) = -2.00, p = .03, g = .48$, and if they agreed that psychedelics can be a therapeutic tool for those with depression, $t(67) = -1.30, p = .10, g = .32$. Participants who identified as having experienced trauma prior to their time in military service were more likely to have a more positive attitude toward these questions, with the effects size of small to moderate. However, the one exception to this trend was in response to the question regarding testing for medicinal value; people who identified as not having experienced trauma prior to their time in military service were more likely to respond positively, and the magnitude of the effect size was moderate.

No Trauma History Reported VS. Reported Trauma Before and During Service

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on no reported trauma history compared to reported trauma history both before and during service. Results indicate that there was a significant difference in responses to the following questions: if the respondents thought that psychedelics could be a therapeutic tool for those with chronic pain: $t(67) = -1.57, p = .06, g = .40$, if they agreed that psychedelics should be tested for their medicinal value: $t(67) = 1.48, p = .07, g = .37$, and if they agreed that psychedelics could be a therapeutic tool for migraine headaches: $t(67) = -1.80, p = .04, g = .45$. Participants who reported trauma history before and during their time in military service were more likely to respond that they thought psychedelics could be a therapeutic tool for chronic pain and migraine headaches, and effect sizes were moderate. The one exception was the response to whether respondents agreed that psychedelics should be studied for their medicinal value; respondents who reported no trauma history were more likely to respond that they thought

psychedelics should be studied for their medicinal value, with a magnitude effect size that was moderate.

No Prior Experience of Persistent Stressful Thoughts VS. Prior Experience of These Thoughts

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether the participants had ever experienced persistent thoughts that caused them ongoing stress. Results indicate that there was a significant difference in responses to the following questions: whether the respondents thought that psychedelics could be a therapeutic tool for chronic pain: $t(67) = -1.34, p = .09, g = .44$, whether respondents thought that psychedelics could be a therapeutic tool for those that have experienced trauma: $t(67) = -1.63, p = .05, g = .53$, if respondents thought that psychedelics could be used as a therapeutic tool for smoking cessation: $t(67) = -1.55, p = .06, g = .50$, and whether participants thought that psychedelics could be addictive: $t(67) = -1.34, p = .09, g = .44$. Participants who reported having experienced persistent thoughts that caused them ongoing stress were more likely to respond positively to the questions regarding the therapeutic use of psychedelics, with moderate effect sizes.

Not Currently Experiencing Persistent Stressful Thoughts VS. Current Experience of Persistent Stressful Thoughts

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether participants reported currently experiencing persistent thoughts that caused them ongoing stress. Results indicate that there was a significant difference in responses to the following questions: if the respondents thought that they were knowledgeable about psychedelics: $t(67) = -1.63, p = .05, g = .49$, if respondents thought that

psychedelics could be used as a therapeutic tool for chronic pain: $t(67) = -2.43, p = .01, g = .72$, if respondents thought that psychedelics could be used as a therapeutic tool for substance use disorders: $t(67) = -1.75, p = .04, g = .52$, if respondents thought that psychedelics could harm one's mental health: $t(67) = -1.60, p = .06, g = .48$, if respondents thought that psychedelics could be used as a therapeutic tool for those that have experienced trauma: $t(67) = -1.62, p = .06, g = .48$, if respondents thought that psychedelics could be used as a therapeutic tool for smoking cessation: $t(67) = -2.05, p = .02, g = .61$, if respondents thought that psychedelics could be used as a therapeutic tool for migraine headaches: $t(67) = -1.85, p = .05, g = .49$, and overall total scores: $t(67) = -1.85, p = .04, g = .55$, with moderate to large effect sizes.

Have Been Diagnosed with a Mental Health Condition vs. Those Who Have Not Received a Mental Health Diagnosis.

Independent t-tests were performed to see if there were any differences in responses to each of the survey questions based on whether participants had no history of a mental health diagnosis compared to having received a mental health diagnosis. Results indicate that there was a significant difference in responses to the following questions: that participants agreed that psychedelics could a therapeutic tool for substance use disorders, $t(67) = -1.9, p = .03, g = .49$, that psychedelics should be tested for their medicinal value, $t(69) = -1.9, p = .03, g = .46$, that psychedelics can be a therapeutic tool for migraine headaches, $t(67) = -1.67, p = .05, g = .44$, that psychedelics could be addictive, $t(67) = -1.78, p = .039, g = .45$, that the federal government should fund more studies to explore medicinal uses of psychedelics, $t(67) = -2.67, p = .01, g = .70$, and in the total scale score measure, $t(67) = -1.97, p = .03, g = .51$. Participants who had received a mental health diagnosis were more likely to agree with the questions regarding the

potential for the therapeutic use of psychedelics, and the magnitude of the effect sizes were moderate.

Comparisons by branch of the military, treatment satisfaction, if they were currently receiving mental health treatment and parental status yielded no significant between group differences.

Discussion

These results add to our currently limited knowledge of military affiliated (current and former military service people's attitudes toward the therapeutic use of psychedelic substances to address physical and mental health concerns.

Discussion of RQ1 Results

Our first research question was: *what levels of knowledge do Texas veterans have about the use of psychedelics to treat mental health conditions?* Our results indicated that overall Texas veterans surveyed overall had moderate levels of knowledge about the therapeutic use of psychedelics. One explanation for this moderate level of knowledge (rather than high levels of knowledge) is that since these substances are still illegal federally, general knowledge concerning their potential therapeutic use may be limited. However, conversely, knowledge may be moderate (as opposed to low) in the student veteran population due to the need for satisfactory relief of mental health symptoms. Respondents seeking relief for ongoing mental health symptoms that may not respond to "traditional" treatment approaches may be looking into alternative treatments, and therefore may have a little more knowledge about the potential use of psychedelics, regardless of their current legal status.

Discussion of RQ2 Results

Our second research question was: *what are the attitudes that Texas veterans have about the use of psychedelics to treat mental health conditions?* Our results indicated that overall attitudes were positive toward the therapeutic use of psychedelics. It is possible that attitudes towards the therapeutic use of psychedelics have been influenced by societal changes in perception about legalization of other psychoactive substances such as marijuana. The positive perception of the therapeutic use of psychedelics could again be in part due to respondents' seeking alternative treatment options for their mental health symptoms. Scores on each question included in this measure ranged from 3.6 to 4.1 on a five-point scale, with a response of 5 indicating very positive attitudes toward the use of psychedelics for the treatment of various physical and mental health conditions. It should be noted that on average, respondents did not perceive much risk associated with the use of psychedelics for therapeutic purposes, responding with low level of agreement with the statement *psychedelics can be harmful to one's health* (mean score of 1.64 after reverse scoring) and *psychedelics can be addictive* (mean of 1.57 after reverse scoring) indicating disagreement with both statements.

Discussion of RQ3 Results

Our third research question was: *do participant attitudes differ based on demographic characteristics or prior experiences of mental health treatment?* Survey results indicate there were statistically significant differences based on demographic factors, explicitly: ethnic background, gender, identification as LGBTQ+, and age.

Differences in Responses Based on Ethnicity

Our survey indicated that White non-Hispanic respondents were more likely to have positive attitudes regarding the therapeutic use of psychedelics relative to BIPOC respondents. This comparison yielded the largest number of questions (7) that non-Hispanic White and

BIPOC respondents differed on including perceptions of dangerousness, if further research should be done to explore their effectiveness and differing views on if the government should fund these research endeavors. These differences may be explained in part by the proclivity for the exclusion of White people from the narrative and negative connotations associated with substance use, as well as the weaponization of drugs against the immigrant and minority communities (Herzberg & Butler, 2019). Whitewashing and criminalization of indigenous cultural practices which include the ingestion of substances, the disproportionate rates of substance related arrests and incarceration and long term consequences for BIPOC individuals related to substance related convictions, institutional and individual racism around how non-Hispanic White and BIPOC individuals who use substances are perceived and portrayed in the media, as well as the documented history of abuse of BIPOC individuals in the scientific and medical systems could also be potential contributing factors to this finding (Drug Policy Alliance, 2016; Herzberg & Butler, 2019).

Differences in Responses Based on Binary Gender

When survey responses were compared to examine disparities between respondents who identified as cisgender female or cisgender male. Results indicated that female respondents were more likely to have positive beliefs and attitudes concerning the therapeutic use of psychedelics. For example, female veterans differed from male veterans regarding the questions about the therapeutic use of psychedelics to treat anxiety, investigation of medicinal value, and recreational use. These differences could be due in part to the higher occurrences of mental health diagnoses (PTSD, depression, anxiety), suicidal ideation, lifetime mental health service use, lower rates of psychological resilience, and a higher likelihood of psychotropic medication usage in female veterans (Adams et al., 2021). Potential contributing factors to this may be the experience of

gender-based bias and discrimination, the military's subpar acknowledgement of and response to military sexual trauma, and disadvantages faced by female veterans in a male-dominated space (Brown et al., 2019). That said, female veterans face unique challenges during their time in service as well as after their time in service is completed, illustrating a need for relief from lifelong mental health symptoms. Persistent symptoms could lead to female veterans being more open to new, untapped methods of treatment for mental health symptoms.

Differences in Responses Based on Identification as LGBTQ+

Results of the survey measure indicated that respondents who identified as cisgender and heterosexual vs. those who identified as part of the LGBTQ+ community in terms of their sexual orientation or gender identity. LGBTQ+ were more likely to hold positive beliefs and attitudes concerning the therapeutic use of psychedelics. For example, LGBTQ+ respondents differed from non-LGBTQ+ respondents on the questions regarding investigation of medicinal value, recreational usage, and perceived addictiveness. Reasons for this could be the experiences of identity-related trauma, discrimination, microaggressions, experience of interpersonal and institutional discrimination enacted upon them by other servicemen and veterans, the experience of minority stress, lack of affirming care, and gaps in medical and mental health services (Livingston et al., 2019; Savarese, 2023; Valentine et al., 2021). Ongoing lack of trauma-informed, affirming care creates a need for new methods of models and therapies for the LGBTQ veteran population.

Differences in Responses Based on Age Based on Age

Following the analysis of the survey measure, results indicated that veterans under 40 were more likely to have positive beliefs and attitudes about the therapeutic use of psychedelics. Veterans over 40 were more likely to believe that psychedelics could be harmful to one's health,

while veterans under 30 were more likely to differ on attitudes about investigation of medicinal value. These differences in attitudes could be based off generational messaging about psychedelics. With the increasing nationwide occurrence of the legalization of marijuana, it is possible that veterans under 40 would be more likely to be open not only to the use of marijuana for physical and mental health treatment, but to the therapeutic use of psychedelics as well (Davis, 2012; Duneman, 2021; Martin & Harris, 2019; Pardo et al., 2022). One significant difference was also found when responses were compared for those who were under 30 vs. those who were 30 and older. Those over 30 indicated that they felt that psychedelics could be used safely and recreationally. Prior research has shown that individuals from ages 16-24 have more positive attitudes about the use of substances, with men being 2 times more likely to view substances more positively than women of (Friis et al., 2017).

Differences in Responses Based on Prior Mental Health Diagnosis

Following the analysis of the survey measure, results determined that veterans who had a mental health diagnosis were more likely to have positive beliefs and attitudes about the therapeutic use of psychedelics. This comparison also yielded a large number of differences in responses (6). Respondents with a diagnosis were more likely to differ on the questions regarding the therapeutic use of psychedelics for treatment of substance use disorders, investigation of medicinal value, treatment of trauma, treatment of migraine headaches, and were less likely to perceive psychedelics as addictive. This effect could potentially be due to veterans with ongoing mental health symptoms seeking relief and looking into alternative methods of treatment for their symptoms (Davis, 2012; Duneman, 2021; Martin & Harris, 2019; Pardo et al., 2022).

Differences in Responses Based on the Experience of Trauma

Regardless of experience of trauma prior to or during service, veterans who reported experiencing trauma were more likely to hold positive perceptions and attitudes about the therapeutic use of psychedelics, yielding different responses across five different measure questions. Veterans who reported trauma were more likely to differentially respond on the questions regarding the therapeutic use of psychedelics for pain management, investigation of medicinal value, treatment of trauma, treatment of migraine headaches, and were less likely to perceive psychedelics as addictive. Again, this could be due to seeking relief from persistent symptoms despite diagnosis through seeking alternative treatments, however an interesting finding was that veterans who reported no prior trauma either prior or during service consistently answered more positively that they felt psychedelics should be investigated for their medicinal value. This could be due to underreporting of trauma, or due to a genuine interest in gaining more knowledge concerning the therapeutic use of psychedelics.

Differences in Responses Based on the Experience of Ongoing Persistent Thoughts that Cause Stress

Respondents who reported currently experiencing ongoing persistent thoughts that cause them stress were more likely to report positive perceptions and attitudes about the therapeutic use of psychedelics. Respondents currently experiencing ongoing stressful thoughts differed in their responses to the questions regarding the therapeutic use of psychedelics for pain management, treatment of substance use disorders, and utilization for smoking cessation. The trend in the data would seem to suggest that these respondents are more interested or more knowledgeable about the therapeutic use of psychedelics. This could potentially be attributed to respondents seeking relief from the symptoms of their ongoing stressful thoughts. Research regarding psychedelics

has been shown to reduce symptoms of depression, anxiety, PTSD, and suicidality (Davis et al., 2020; Hendricks et al., 2015; Jones & Nock, 2022; Zeifman et al., 2020)

Study Limitations

There are some limitations of this study that warrant some additional discussion. First and foremost, the size of the study is an especially important limit to consider. With less than 100 people fully completing the survey, results of the survey cannot be generalized outside of the respondents that completed the survey. Due to the small sample size, demographic comparison results cannot be generalized either, most notably those of female participants. With regards to this specific study, selection bias, recall bias, non-response bias, and the inability to infer causation from cross-sectional data limit inferences and conclusions that can be drawn from the results. Data were drawn from current and former military service members at one large urban public university in the southern part of the United States. Thus, these results may not apply to all past and current military service members attending college. Selection bias is always a possibility when surveying a specific group, but these effects could also be due to the typical age of respondents, the fact that respondents were students, and influence of political affiliation on responses. Future iterations of this study could be done with veteran populations in other geographical areas, from veterans not currently attending a university, and would collect information about political affiliation to determine if there were effects on responses.

Although 69 participants completed the survey in its entirety, 53 participants completed all the demographic questions but declined to complete the attitude measures concerning the therapeutic use of psychedelic substances. This demonstration of selection bias, recall bias, and non-response in results could explain more positive responses to survey questions because those who completed the survey might already be more likely to have positive attitudes about the use

of psychedelics. One potential explanation for the fall off of nearly half the survey participants could be due to the sheer novelty of the content, which asked their opinions on the uses of substances that are largely prohibited or portrayed as having no therapeutic values based on the current classification as a Schedule 1 drug (DEA, n.d.). The intent behind the formulation and selection of questions was to explore potential correlations between demographics, prior trauma experiences, prior history with diagnoses and treatment, and attitudes and perceptions about the use of psychedelics. However, despite not containing questions directly asking about substance use, the survey does ask questions concerning topics that some would consider “sensitive” leading to potential reluctance to respond to these questions. When completing the survey, participants may have experienced fear surrounding potential repercussions of answering questions regarding the use of psychedelic substances, despite the survey being anonymous.

Implications for Social Work Practice

Despite these limitations, this work has important implications for social work practice. One implication of this work is the need for ongoing accurate education about the potential therapeutic use of psychedelics for physical and mental health concerns. This study demonstrated that this sample of veterans had moderate knowledge about the therapeutic use of psychedelics, and that overall veterans supported the investigation of psychedelics for their medicinal value and supported the proposition that the federal government should fund such research. However, opportunities for more widespread public education efforts, both in veteran communities and for the public remain. Moreover, more information concerning the availability and application of these interventions for veterans is warranted for those who have not obtained optimal symptom relief through traditional therapeutic methods.

One area that warrants further exploration is the attitudes that service providers have towards the therapeutic use of psychedelics. The lack of awareness and advocacy on behalf of veterans surrounding these options could be a byproduct of service providers' biases surrounding the use of these medications for health-related concerns or may also be indicative of an overall lack of accurate information and training on these investigational intervention approaches. (Merino, et al.,2018). Social Work professionals should actively explore how their individual biases may impact service delivery, especially for clients who are not being truly "helped" by other, more established treatment approaches. Increasing the availability of clinician training in psychedelic therapies, along with decreasing the often-steep cost associated with completing these trainings, may make these options more accessible and available to vulnerable clients, like veterans and military service members.

Implications for Social Policy Related to Psychedelics

Policy changes regarding psychedelics, and substance use in general, are not only necessary, but long overdue. The differences amongst all the demographic comparisons on survey responses could potentially demonstrate the interest and knowledge that veterans and service members have about research for the use of psychedelics to treat mental health diagnoses. This would be consistent with the advocacy on behalf of veteran groups advocating for use, such as Vet Solutions or Heroic Hearts, that help veterans in need get access to psychedelic treatments where they are available. The VA itself most recently spoke about exploring psychedelics as a treatment option in veterans (Sage & Peterson, 2023). These discussions happening among veterans and their advocacy groups could be factors contributing to these results. Psychedelics were classified as Schedule I substances in the Controlled Substances Act in 1970, when the government claimed they had a high abuse risk and no safe

medical use (Ortiz & Preuss, 2023; Texas State Board of Pharmacy, 2014). The continued assertion that psychedelics are Schedule I substances becomes exceedingly outdated and ill-informed with each passing day, as research in this area is beginning to establish the safety and effectiveness of these intervention approaches when administered under appropriate supervision by a well-trained interventionist. Continued classification of psychedelics as having “no medical use” and having a “high risk of abuse” is preventing much meaningful research from being initiated or continued. Moreover, inappropriate classification maintains the system that upholds institutional betrayal of service people and veterans and perpetuates erasure of the acts committed by the government that lead to their classification as Schedule I substances in the first place (Bloeser et al., 2021; Geppert, 2022; Smidt & Freyd, 2018; Smith, 2019). Reclassification is needed urgently to allow for more research to be done addressing the concerns surrounding the use therapeutic use of psychedelics. Psychological risks, physical risks, dosing, and practice standards must be established and further researched to support safe and meaningful use of psychedelics in mental and physical health care (Belouin et al., 2022).

With reclassification will also come a need for policy changes surrounding third party reimbursement for these therapies. Rescheduling and additional research supporting psychedelic therapies are essential first steps to enacting policy change regarding alternative therapies. Often, what are considered “experimental”, or “alternative” therapies are not perceived favorably and thus are typically not covered, which further separates vulnerable individuals in need of relief from therapies that could help to improve their overall functioning and quality of life. (Belouin et al., 2022; Blue Cross Blue Shield, 2017). Policy changes allowing third party reimbursement to cover client’s treatment costs would help these at risk-individuals and populations gain access to these innovative treatments (Aday et al., 2023).

There also needs to be a change in the narrative concerning the “dangerousness” of psychedelics, to destigmatize their therapeutic use, and destigmatize individuals who are using them. The concerns and risks of psychedelics have been outlined, and additional research is still needed. However, many of the risks and safety concerns can be mitigated by appropriate training and supervision of individuals wishing to administer these types of treatments.

Unfortunately cost remains a barrier to treatment for many. Without affordable access to regulated and supervised psychedelic dosing people will continue to self-administrate as they have been, historically. That said, the value of community care and peer support cannot be understated (Harder et al., 2023). Thus, as we seek to professionalize the field, this cannot occur at the expense of the indigenous knowledge that has guided this field for many years.

Colonization by “big pharma” must be avoided so that the holistic healing elements of psychedelic therapy are retained, and these types of therapies have both chemical and behavioral components associated with appropriate use.

Implications for Future Research on Psychedelics

These results highlight several areas in which more research is needed concerning the safe and ethical therapeutic use of psychedelic substances. The first pressing area of research when it comes to administration of psychedelic therapies is optimal dosing guidelines and practices for each substance and each physical or mental health condition. It is important to explore differences in individual reactions to psychedelic substances both on a population wide level, but also on an individual level. This research would help determine if these differences are due to differences in physiology or brain chemistry, or if they are attributable to other social and environmental factors. What is certain is that more information and education is needed about dosing standards within standardized care as well as within the community itself to help prevent

potential harm. Although information is available to find with some effort, without stigma reduction efforts, individuals may be afraid of the repercussions of seeking this information and could be more at risk to experience harmful effects of taking large doses, particularly if they are self-administered. Each psychedelic substance has its period in which it impacts the neurobiology of the users, along with different potential side effects and health related risks. This is imperative to test multiple substances for their effectiveness for addressing mental health concerns.

Second, it is recommended that this study is expanded in two ways 1.) by gathering information from a national sample of veteran college students and 2.) by gathering additional information from other groups of veterans who are not currently enrolled in a college or university. Recruitment for these studies could be facilitated through partnerships with universities, veterans' services organizations, and through partnerships with healthcare providers such as the VA. Although our results support preliminary acceptability of psychedelic therapies, more research is needed to acquire feedback from diverse groups of veterans and veteran serving providers to truly establish the acceptability and feasibility of psychedelic based healthcare interventions (Sage & Peterson, 2023). Immediate implications for further research regarding psychedelics would engage a larger veteran population.

Another interesting avenue of research would also be investigating whether veterans' attitudes toward the use of psychedelic therapies differ based on the kind of psychedelic substance used for treatment. It is possible that their attitudes may vary based on if the psychedelics were synthetic, such as LSD versus those which are organic, like peyote or psilocybin. It is likely that there are historical, cultural, or demographic factors that could also be influencing the perception of these substances. Due to lack of accurate information available

about many psychedelic substances, some of them that have been featured prominently in the media may be perceived as inherently more dangerous than others, impacting treatment uptake and their potential for third party reimbursement. This research could help give additional direction about research and development resources and how they should be allocated based on perceived benefit or harm (Carhartt-Harris et al., 2018; Devenot et al., 2022; Johnson et al., 2008; Malitz et al., 1960; Rinkel et al., 1960).

Lastly, this body of work demonstrates that there is plenty of room for more research to be done within different demographics such as within the LGBTQ+ veteran community, the community of female veterans, the community of veterans who served in multiple tours deployed in combat, and the BIPOC veteran communities. The results of the survey indicated that there were differences in opinions about psychedelics in groups 40 and under and 40 and older. This area could be explored to see if there are specific time frames with regards to military tours that hold specific opinions about psychedelics, which could indicate areas of need. For example, it is worth exploring whether there is a difference in attitudes and opinions about psychedelics in veterans who served in Vietnam versus veterans who served in Afghanistan. The results regarding BIPOC responses are also interesting and warrant more investigation. Although there are historical and cultural psychedelic practices associated with a wide variety of BIPOC communities, BIPOC respondents responded less favorably than white respondents. The attitudes BIPOC veterans hold about psychedelics could be due to historical racist policing and legislative practices, however conclusions cannot be drawn without further investigation (Taifa, 2021; Thurl & Garcia-Romeu, 2021).

Advocating for Harm Reduction

A change in openness to the use of psychedelics to address a variety of behavioral health conditions is, in part, a byproduct of the fields of mental health and substance use treatment embracing harm reduction-based intervention methods that do not require cessation of all substance use, even within the course of mental health or substance use treatment. Harm-reduction focuses on education and utilization of what is available to reduce the risk of harm and injury, rather than just abstinence from substances. This has important implications for individuals who may choose to self-administer psychedelic substances to get relief from physical and/or mental health concerns. Individuals who want to self-administer psychedelic substances in a non-clinical setting can learn to reduce harm by including a trusted peer or friend in the administration process, and reliable information about ways one can best provide support during administration of psychedelic substances is needed to reduce harm for those who choose to self-administer these substances.

One resource to consider is the Fireside Project. The Fireside Project is a non-profit psychedelic peer support line that can be texted or called while an individual is engaging with these substances. One can speak with volunteers that provide peer support during challenging moments or to share the intimacies of their experiences (Fireside Project, 2023). Peer facilitators go through a rigorous training process to ensure that as much risk is reduced as possible and as much benefit is received as possible. The Fireside Project is an excellent example of how non-judgmental support can be provided during psychedelic experiences utilizing community care and peer support guidelines. Though it would be ideal to have professional supervision, there are currently no static standards to determine what professional supervision looks like. As such, the information that is already available from the community provides invaluable experiences,

guidelines, and best practices used by the community until standardized affordable care is available.

Conclusion

Overall, this work makes a significant contribution to our current state of knowledge concerning military service and veterans' attitudes toward the use of psychedelic therapies for common physical and mental health concerns. Our military service members have given much to our country, thus we have a responsibility to provide them with additional effective treatment approaches to address ongoing physical and mental health concerns that have not responded to "traditional" treatments. This comes through expanding the currently occurring research on the therapeutic uses of psychedelics and training more clinicians in psychedelic therapy.

Through expanding research with the collaboration of veterans in need of relief, the opportunity to potentially experience the benefits of psychedelics offers a unique chance for reparations to be made not only to veterans following the trail of institutional betrayal via humans' rights abuses in prior history, but to the Indigenous community by centering and including their methods and voices as leaders in the new wave of research. The best path forward is to learn from the mistakes that have already been made through cultural appropriation, whitewashing, racist policies, cultural erasure, abuse, criminalization, and a host of other issues. With concentrated, intentional, creative effort, there is room for innovative research that will bring psychedelic therapy into the future, while utilizing the importance of its past to inform its foundation. Global impairments in mental health have been a growing crisis, and what is clear is that what we have been doing is not achieving the results that are required to lessen the burdens on our veterans, as well as our non-veteran citizens. Veterans have already led the way for our country, why not let them lead the way in their healing? All that is required is an open mind and

the ability and desire to envision a better future for everyone, but our society is only as healthy as our members in the most need. The path forward is to carefully learn from the subtle mental motions that psychedelics incur, and then learn to reproduce them in sobriety.

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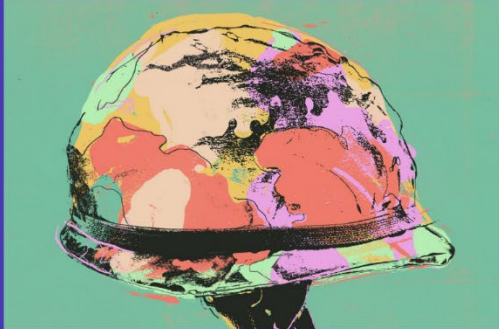
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Appendix A
Recruitment Materials

WE WANT TO HEAR FROM YOU!

STUDY SEEKING FORMER AND PRESENT MILITARY SERVICE MEMBERS' PERCEPTIONS OF THE USE OF PSYCHEDELIC SUBSTANCES FOR THE TREATMENT OF MENTAL HEALTH CONDITIONS.




THIS PROJECT HAS BEEN APPROVED BY THE UNIVERSITY OF TEXAS INTERNAL REVIEW BOARD (IRB). FOR QUESTIONS ABOUT YOUR RIGHTS OR TO REPORT COMPLAINTS, CONTACT THE PRIMARY RESEARCHER, CHLOE SEAY AT CNS9116@MAVS.UTA.EDU, 8062396621

MAKE YOUR VOICE HEARD FOR THE MENTAL HEALTH OF VETERANS

GIVE US YOUR FEEDBACK TO INFORM FUTURE STUDIES

CONTRIBUTE TO RESEARCH SEEKING BETTER MENTAL HEALTH OUTCOMES

SCAN THE QR CODE TO BE TAKEN TO THE ANONYMOUS QUALTRICS SURVEY



INCLUSION CRITERIA:
AGES 18 AND OLDER
PARTICIPANTS MUST BE CURRENTLY ENROLLED AS A STUDENT AT A TEXAS UNIVERSITY
PARTICIPANT MUST IDENTIFY AS A VETERAN OR CURRENT MEMBER OF THE UNITED STATES MILITARY.
THE RESEARCHER WILL CONDUCT AN ONLINE PRE-SCREEN TO DETERMINE ELIGIBILITY AS INDICATED IN THE PRIOR SECTION OF THIS DOCUMENT.

EXCLUSION CRITERIA:
INDIVIDUALS UNDER THE AGE OF 18,
INDIVIDUALS WHO ARE NOT CURRENTLY ENROLLED IN A TEXAS COLLEGE OR UNIVERSITY, INDIVIDUALS WHO HAVE NOT SERVED IN THE MILITARY, AND INDIVIDUALS WHO HAVE BEEN DISHONORABLY DISCHARGED FROM THE MILITARY.

Figure A. The flyer designed for the University of Texas at Arlington, approved by the IRB.

Recruitment email

Dear Veterans,

My name is Chloe Seay and I am currently working on my thesis as a part of my Masters of Social Work degree. You are receiving this email because you are a United States military service member or veteran attending UTA. My team and I are recruiting military/veteran college students to participate in a confidential research study exploring your knowledge of and attitudes toward the use of psychedelic substances such as peyote, psilocybin, MDMA “ecstasy” or ayahuasca to treat common mental health conditions such as depression, anxiety, or trauma.

If you may be interested in participating please go to https://uhsocialwork.co1.qualtrics.com/jfe/form/SV_eLkc6N6hRzkaVxk to complete our online screening or scan the code below



Currently there is very little research on the attitudes of military service members/veterans towards the use of psychedelic substances for mental health conditions, so your participation will allow us to learn more about if these types of treatments may be appropriate for those in need of help.

If you have any colleagues who are veterans and are currently attending an institution of higher learning in Texas that may be interested in participating, please share the link with them. Your total time of participation will be 15-20 minutes and you can opt into a drawing for one of 3 \$100 Amazon gift cards to thank you for your participation.

This project has been approved by the University of Texas Internal Review Board (IRB). For questions about your rights or to report complaints, contact the UTA Research Office at 817-272-3723 or regulatoryservices@uta.edu. If you have any questions about this survey, please contact my faculty supervisor Dr. Micki Washburn, at micki.washburn@uta.edu or 832-498-1015.

Thank you for your time and consideration,

Chloe Seay

Appendix B

Screening Questions, Consent Form and Survey Instrument

Former and present military service members perceptions of psychedelic substances

Start of Block: Default Question Block

Q1 Are you over the age of 18

- No (1)
- Yes (2)

Skip To: Q2 If Are you over the age of 18 = Yes

Skip To: End of Survey If Are you over the age of 18 = No

Q2 Are you currently serving in any branch of the United States Military (such as the Army, Navy, Air Force, Marine Corps, Coast Guard or National Guard) or have prior service and have been honorably discharged from the United States Military?

- No (1)
- Yes (2)

Skip To: Q3 If Are you currently serving in any branch of the United States Military (such as the Army, Navy, Ai... = Yes

Skip To: End of Survey If Are you currently serving in any branch of the United States Military (such as the Army, Navy, Ai... = No

Q3 Are you currently enrolled at a Texas college or university?

No (1)

Yes (2)

Skip To: End of Survey If Are you currently enrolled at a Texas college or university? = No

Q4

INFORMED CONSENT for Study Participation Study Title: Military service members and veterans attitudes toward the use of psychedelics for mental health treatment.

Principal Investigators: Ms. Chloe Seay and Dr. Micki Washburn

Key Information

The following information is being presented to assist you in understanding the key elements of this study, as well as the basic reasons why you may or may not wish to consider taking part. This section presents detailed study information, including how to contact the research team for additional information or questions.

What should I know about a research study?

We invite you to take part in a study to explore the attitudes of current military service members and veterans about the use of psychedelic substances (such as MDMA “ecstasy”, ayahuasca, psilocybin (mushrooms), mescaline (peyote), LSD, DMT etc.) to treat common mental health conditions such as depression, anxiety or post-traumatic stress disorder (PTSD). This work is being done as a part of the thesis project for Ms. Chloe Seay, who is currently working on her Masters of Social Work degree.

Your participation in the research involves a one-time confidential 20-minute survey to be completed online after you read this consent form. The primary risk to you in taking part may include some discomfort with some questions, as they ask if you experienced a mental health condition and ask your opinion about the use of substances that are currently not routinely used in treatment. This study is confidential and will not be collecting any identifying information such as your name, social security number, birth date, student ID number etc. Taking part in the research is voluntary; whether you take part is up to you. You can choose not to take part. You can agree to take part and later change your mind. Your decision will not be held against you.

Why is this research being done?

This research will explore the attitudes of those with a history of military service about their attitudes toward the use of psychedelic substances to treat common mental health concerns. Right now, there is very little research in this area. Given that those with military service experience are more likely to experience mental health concerns than those in the civilian

population, our team wants to collect additional information in this area as military service members/veterans may benefit from these types of treatment if they were available.

How long will the research last?

The study will be ongoing until December 2023.

How many people will be in the study?

The study is open to all military service members/veterans currently enrolled in a Texas college or university. We hope to receive at least 150 survey responses.

What happens if I say yes, I want to participate in this research? You will be asked to take a brief 15-20-minute online survey that you are going to complete now. This survey will ask you about your age, gender, length of service, mental health, and attitudes toward the use of psychedelics.

What happens if I do not want to be in this research? You can choose not to take part in the research, and it will not be held against you. Choosing not to take part will involve no penalty or loss of benefit to which you are otherwise entitled. If you are a student, a decision to take part or not, or to withdraw from the research will have no effect on your grades or standing at your University.

What happens if I say yes, but I change my mind later?

You can stop answering survey questions at any time and it will not be held against you. If you stop answering survey questions, the questions you complete will be removed from the study record.

Is there any way being in this study could be bad for me?

There are no foreseeable risks related to the procedures conducted as part of this study other than potentially feeling uncomfortable answering some of the questions, but this should not be in excess of what you experience in your day-to-day life. At the end of the survey there is a list of low cost local mental health resources for your reference.

Will I get anything for being in this study?

If you complete this survey, you can choose to "opt in" to a random drawing for one of three \$100 Amazon e-gift cards. You will be given a link that will take you to a separate survey to enter your email address. Your survey responses will not be linked to the email address that you provide to be entered into the drawing. If you are a winner, you will be emailed by a member of the UTA school of social work staff who will instruct you how to access your gift card and request that you provide her with a document indicating that you received the gift card.

Will being in this study help me in any way?

There are no direct benefits to you from your taking part in this research. However, you will be adding to our currently limited knowledge about past and current military service members attitudes toward the use of psychedelics for mental health treatment.

What happens to the information collected for this study?

Efforts will be made to limit the use and disclosure of your personal information, including research records, to people who have a need to review this information. This study is confidential, no information will be collected that could identify you personally. We will aggregate survey responses so that individual responses are not shared. We may publish the results of this research in a scientific journal or present it at a conference. and we will keep information confidential. We WILL NOT disclose any information about you or your responses to ANY government agency. Only the study lead and her faculty supervisor will have access to your survey responses. You will be asked at the end of the study if you wish to provide your contact information for future studies in this area. This information will be kept separately from all other study data and will not be available to anyone except me and my faculty advisor, Dr. Micki Washburn.

Who can I talk to if I have additional questions?

If you have any questions about this survey, please contact me via email at cns9116@mavs.uta.edu or call or text me at 806-239-6621. This project has been approved by the University of Texas Internal Review Board (IRB). For questions about your rights or to report complaints, contact the UTA Research Office at 817-272-3723 or regulatoryservices@uta.edu.

- Yes, I consent to participate in this study (1)
- No I do not consent to participate in this study (2)

Skip To: End of Survey If INFORMED CONSENT for Study Participation Study Title: Military service members and veterans attit... = No I do not consent to participate in this study

Q5 Please select your age range

- Under 21 (1)
- 21-29 (4)
- 30-39 (5)
- 40-49 (6)
- 50 and over (7)
- Prefer to not answer (8)
-

Q6 Please indicate which race or ethnicity best describes you (select all that apply)

- American Indian/Indigenous (1)
- Asian/Pacific Islander (2)
- Black/African-American (3)
- Hispanic/Latino/a/x (4)
- White/Caucasian (5)
- Prefer to not answer (6)
-

Q7 How do you describe your sexual orientation? If you prefer to not answer, write "NA"

Q8 How do you describe your gender/gender identity? If you prefer to not answer, write "NA"

Q9 Are you a parent?

- No (1)
- Yes (2)
- Prefer to not answer (3)

Q10 Which branch(es) of the military do/did you serve in? Check all that apply

- Army (1)
- Navy (2)
- Air Force (3)
- Marine Corps (4)
- National Guard (5)
- Coast Guard (6)
- Prefer to not answer (7)

Q41 Are you currently serving in the military (active duty or reserves) or are you a veteran who has completed your term of service?

- I am currently on active duty (1)
 - I am currently in the reserves (2)
 - I have finished my service and identify as a veteran (4)
 - Prefer not to answer (5)
-

Q11 How many years have you served/did you serve in the military? If prefer to not answer enter "NA"

Q12 Had you experienced trauma (such as homelessness, ongoing food insecurity, sexual assault, physical assault, relational or emotional abuse, immigration trauma, witnessing violence inflicted on others, witness the death of someone due to violence, lived in foster care, incarceration, school or other public shooting, separation from one's family due to forced migration loss of home or business due to natural disaster, etc.) prior to your military service?

- No (1)
 - Yes (2)
 - Prefer to not answer (3)
-

Q13 Did you experience trauma (such as homelessness, death of other military members, sexual assault, physical assault, relational or emotional abuse, witnessing violence inflicted on

others, witness the death of someone due to violence, loss due to natural disaster, etc.) while serving in the military?

- No (1)
 - Yes (2)
 - Prefer to not answer (3)
-

Q14 Have you ever experienced persistent thoughts that caused you ongoing stress?

- No (1)
 - Yes (2)
 - Prefer to not answer (3)
-

Q15 Do you currently experience persistent thoughts that cause you ongoing stress?

- No (1)
 - Yes (2)
 - Prefer to not answer (3)
-

Q16 Have you ever received a mental health diagnosis for a condition such as depression, anxiety or post-traumatic stress?

- No (1)
 - Yes (2)
 - Prefer to not answer (3)
-

Q17 Have you ever received treatment (such as therapy or medication) for your mental health diagnosis?

- No (1)
 - Yes (2)
 - Not applicable, I have never received a mental health diagnosis (3)
 - Prefer to not answer (4)
-

Q18 Are you currently receiving treatment (such as therapy or medication) for your mental health diagnosis?

- No (1)
 - Yes (2)
 - Not applicable, I have never received a mental health diagnosis (3)
 - Prefer to not answer (4)
-

Q19 If you are currently receiving mental health treatment how satisfied are you with your treatment?

- Very unsatisfied (1)
- Unsatisfied (2)
- Neither satisfied nor unsatisfied (3)
- Satisfied (4)
- Very satisfied (5)
- This is not applicable to me (6)
- Prefer to not answer (7)

End of Block: Default Question Block

Start of Block: Block 1

Q20 Thank you for completing the demographic questions, you are almost finished with the survey. Please verify that you are not a robot.

Q21 The next group of questions will ask you about your attitudes regarding the use of psychedelic substances for the treatment of mental health conditions. Psychedelics include Psilocybin (mushrooms), Lysergic acid diethylamide (LSD), Dimethyltryptamine (DMT), Mescaline (Peyote), Ololiuqui, Ecstasy (MDMA), Ayahuasca, Kambo, 5-MeO-DMT (Bufo).

Please indicate which answer choice most closely indicates your level of agreement with the following statements with

1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree.

I am knowledgeable about psychedelic substances

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly Agree (5)
 - Prefer to not answer (6)
-

Q22 Psychedelics can be a therapeutic tool for those with anxiety

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q32 Psychedelics can be a therapeutic tool for those with depression

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q31 Psychedelics can be addictive

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q30 Psychedelics can be a therapeutic tool for those with migraine headaches

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q29 Psychedelics can be safely enjoyed when used recreationally, much like alcohol or nicotine

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q28 Psychedelics can be a therapeutic tool to aid in smoking cessation

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q27 Psychedelics can be a therapeutic tool for those who have experienced trauma

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q26 Psychedelics should be tested for their medicinal value

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q25 Psychedelics can be harmful to one's mental health

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q24 Psychedelics can be a therapeutic tool for those with substance use disorders

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q23 Psychedelics can be a therapeutic tool for those with chronic pain

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q33 The federal government should fund studies to explore medicinal uses of psychedelics

- Strongly disagree (1)
 - Disagree (2)
 - Neither agree nor disagree (3)
 - Agree (4)
 - Strongly agree (5)
 - Prefer to not answer (6)
-

Q35 If you would like to be entered into a random drawing for a \$100 Amazon e-gift card please click this link

https://uhsocialwork.co1.qualtrics.com/jfe/form/SV_9WTA55vCOULG4Bw

If you would like to be contacted about future opportunities to participate in this type of research then click this link

https://uhsocialwork.co1.qualtrics.com/jfe/form/SV_6rK1mk9wJiPtaZg

If you would like to be entered into a random drawing for \$100 AND be contacted about future opportunities to participate in this type of research then click this link

https://uhsocialwork.co1.qualtrics.com/jfe/form/SV_9LF4rWwooai4Pjw

If you are not interested in either of these, just click "next". Resources for you or someone you know who may be in need of assistance are listed below.

If you or someone you know is struggling with thoughts of self harm, dial 988 for free 24/7 access to the Suicide & Crisis Lifeline or you can visit their website to do an online chat at

<https://988lifeline.org/talk-to-someone-now/>

Veteran Affairs: Office: 817-272-3017 , va@uta.edu

UTA Counseling and Psychological Services: P: 817-272-3671 & 817-272-1888

or <https://www.uta.edu/student-affairs/caps>

24 hour Mavs Talk Line: 817-272-8255

For mental health services for uninsured or underinsured, please contact North Texas Area Community Health Centers at 817-625-4254 or visit their website at <https://ntachc.org/>

End of Block: Block 1

Appendix C

Gift Card Winners Email

Congratulations! You recently completed a survey on military service members/veteran's views on the use of psychedelic substances for the treatment of mental health conditions. Your email was randomly selected to receive a \$100 Amazon e-gift card. Please complete, sign and return the attached form. You only need to provide your name, your signature and the date. Once this form is received, I will send you the code for the e-gift card. Please contact me at this email if you have any questions or concerns.

Thank you,

Connie Quintana – Accountant III

UTA School of Social Work