Psilocybin as a Therapeutic Treatment for Race-based Trauma and PTSD

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CAP 501-Masters Capstone Project-2023

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April 23, 2023

Abstract

Psychedelics have been used by ancient and Indigenous cultures for thousands of years and were introduced to the Western scientific world in 1897 by Arthur Heffter. Psilocybin, found in psilocybe mushrooms, activates psychedelic effects through the metabolization of psilocybin into psilocin and acts agonistically at serotonin receptors 5-HT2A and 5-HT2B. Psilocybin elicits profound experiences and meaningful shifts in perspective and mindset and has shown promising efficacy in treating mental illness and addiction. However, there is a lack of empirical data on how race and ethnicity play a role in the use of psychedelics as treatment, due to the underrepresentation of BIPOC (Black, Indigenous, and People of Color) individuals in research design, study, and clinical trials. From a biological and physiological standpoint, humans, regardless of race, are identical. However, our individual experiences shape the trauma we endure. In the United States, race can significantly impact the experiences of BIPOC individuals, resulting in trauma that is particularly challenging, harrowing, and potentially life-threatening. To uncover the effectiveness of psychedelic-assisted treatments for mental illness, it is crucial to generalize findings from psychedelic research across the entire population. However, without understanding how racism manifests in the minds and bodies of BIPOC individuals, and how it leads to trauma, the full therapeutic potential of psychedelics remains unknown. Evidence suggests that psilocybin decreases traumatic symptoms and dissociation associated with experiences of racism, including anxiety, depression, and traumatic stress that may lead to PTSD. While also increasing psychological flexibility, psilocybin-assisted therapy may allow for greater insight, coping ability, reduced reactivity, and hyperarousal in the face of discriminatory incidences. Further BIPOC-inclusive clinical research is needed to better understand appropriate dosages and efficacy of psilocybin-assisted treatment for race-based trauma and PTSD.

Psychedelics are a category of compounds that act agonistically on serotonin receptors (Jones & Nock, 2022). They were first introduced to Western science in 1897, when Arthur Heffter isolated mescaline from the peyote cactus (Nutt 2022). In 1943, Albert Hofmann first synthesized lysergic acid diethylamide (LSD) and then in 1958, isolated psilocybin and lesser quantities of psilocin from the mushroom P. mexicana (Hofmann, et al. 1958). However, many natural psychedelics such as those derived from plants and mushrooms were originally brought to the Western world from Indigenous cultures across the globe who have used these natural medicines for centuries. Western research into psychedelics flourished in the 1950s and 1960s, with over 130 grants funded by the National Institutes of Health (NIH) and the US government, until the ban of most psychedelics, including LSD and psilocybin in 1967 (Nutt, 2022). Sandoz, the Swiss pharmaceutical company launched Indocybin by prescription in the 1960s, a drug which converted psilocybin, into the active ingredient psilocin, in the body. According to Nutt, psychedelics were tested in the 1950s and 1960s to treat various psychiatric disorders. The key target for psychedelics is the 5-HT2A serotonin receptor, acting as an agonist and at 5-HT2B where they act as either an agonist or partial agonist. Psilocybin is a classic psychedelic compound, found in specific “magic” mushrooms, that elicits profound experiences and mystical perceptual shifts. These experiences often evoke feelings of oneness with humanity and the universe. The effects often produce meaningful changes in perspective and mindset for participants (Jones & Nock, 2022). These profound experiences often rank in life significance on par with the birth of a child or the death of a parent, for the participant. Psilocybin has demonstrated therapeutic potential in many clinical studies for treatment-resistant post-traumatic stress disorder (PTSD). According to the Department of Veterans Affairs, PTSD will affect over 26 million people in the US and over 350M people suffer from PTSD globally. Psilocybin’s reputation has earned it special designation by the FDA as a “breakthrough therapy.” It has also

demonstrated promising results in treating PTSD, anxiety, tobacco and substance use disorders, and a reduction in suicidality (Jones & Nock, 2022). Nutt suggests that psilocybin may disrupt dysregulated brain circuits that lead to depression. Another thought is that psilocybin tempers activity in the subgenual cingulate cortex, which plays a significant role in the regulation of emotions.

Despite the positive potential of psychedelic study, there is a lack of empirical data on how race and ethnicity play a role in the use of psychedelics as treatment, as most participants in research and clinical trials are mostly White. Race-based trauma and PTSD are often underreported and undiagnosed in clinical settings for many reasons -- low awareness or recognition by clinicians, discomfort with race-related dialogue and lack of tools to measure and assess PTSD associated with racial trauma. The issue is further compounded by cultural stigma of mental illness, methods of research recruitment, and varying attitudes regarding the use of psychedelics based on cultures and countries of origin (Williams & Labate, 2020). According to Williams, 2019, ethnic minority groups experience higher rates of PTSD over White Americans and experiences of racial discrimination have a damaging effect on mental health. In a systematic review of 121 studies by Desalu et al., 2019, found racism consistently had a negative impact on mental health in almost half of the studies reviewed. Other large-scale studies show that everyday experiences, including microaggressions, were linked to anxiety, substance abuse, and depression (Clark, et al, 2015). Another study found experiences of racism were an important indicator of trauma (Williams, Printz & DeLapp, 2018).

Davis, et al. 2021, suggests race-based PTSD may be a consequence of reduced psychological flexibility, whereby affected individuals grapple with the inability to adjust behavior when faced with experiences that threaten their values or belief system. Psychological flexibility is defined as psychological processing to help individuals manage and cope with

stressors and adapt behavior based on upholding their values and beliefs. Psychological flexibility is believed to offer people a greater capacity to identify and adjust behavior based on changes in mindset, contextual demands, and social cues that allow for balance in life and maintaining congruence with one's values and beliefs, even in the face of negative experiences. While several effective treatments for PTSD are available, many of these treatments do not address race or ethnicity as contributing factors to the trauma. Thereby, treatments may treat the symptoms, but may not address the source of the trauma. Current gold-standard treatments for PTSD include cognitive processing therapy (CPT), prolonged exposure (PE), and eye movement desensitization and reprocessing (EMDR). These methods coupled with psychotherapy have proven effective in treating conventional forms of PTSD. PTSD is typically defined as an anxiety disorder that occurs as a result of physical injury or severe emotional or mental distress -- such as war/military combat, violent assault, life-threatening disease, natural disaster, or other existential events. (National Cancer Institute, n.d.). However, according to Ching, et al., 2022, race-related trauma is rarely caused by a singular or discreet event, but instead the cumulative effect of multiple discriminatory experiences over time. Carhart-Harris et al., 2016, also tie this to fewer studies focusing on racial trauma, its prevalence, and PTSD. This is compounded by the fact that those who suffer from race-based trauma and PTSD, also typically experience greater systemic disparities and are even less likely to have access to mental health care.

Mounting research of psilocybin and other psychedelics reveals promise for the treatment of a wide spectrum of mental health disorders including treatment-resistant depression, anxiety, alcohol and tobacco use disorders, cancer-related existential fears, and PTSD. One territory of emerging study is to assess the efficacy of novel psychedelic-assisted therapies for the treatment of mental disorders in clinical settings. According to Williams, et al. 2020, two clinical trials using psilocybin as adjunct therapy exhibited decreases in symptoms of depression and anxiety

and benefits from a single session lasting for six months. While these trials have garnered positive benefits using psychedelic-assisted therapy, they remain small and lack BIPOC (Black, Indigenous, and People of Color) inclusion. Williams et al., go on to state that across 18 global studies on psychedelic-assisted therapy, a disproportionate number of participants were non-Hispanic White (82%) and BIPOC participants made up a very small, combined total -- Black 3%, Latinx 2% Asian 2%, Indigenous 5%, mixed race 5%, “other” 2% and unknown 8%. Very few studies directly focus on psychedelics and their effects on race-based trauma. The lack of BIPOC representation in psychedelic studies and the lack of BIPOC use of psychedelics create equity gaps for accessibility and well-being among People of Color. The purpose of this study is to explore the use of psilocybin as a therapeutic treatment for race-based trauma and PTSD.

Methods

A methodological search of psychedelic studies from 2010 to 2023 was conducted to evaluate the effectiveness of psychedelics, particularly psilocybe mushrooms in treating race-based trauma and PTSD. Searches of PubMed and Google Scholar were conducted for articles in English, in peer-reviewed journals, and literature reviews, reporting on “psilocybin,” and “psychedelics,” and "trauma" and/or "race" or "BIPOC" or "people of color" or "racism" in human subjects, published between 2010 and 2023. Of the search strings the following number of results were listed and screened:

PubMed results:

Psychedelics + trauma: 143

Psychedelics + racism: 1

Psychedelics + BIPOC: 5

Google Scholar:

- Psychedelics and racial trauma: 12,400
- Psychedelics and BIPOC: 140
- Psychedelics and AAPI or Asians or Asian-Americans or Black or African Americans or Indigenous or Indigenous Peoples or Latino or Latinx: 25
- Psychedelics and People of Color: 20,100
- Psilocybin and racial trauma: 14,600

Articles that did not contain the terms “clinical trial,” or “therapy,” or "review," in the title or abstract were filtered out. The 161 remaining articles were reviewed by two or more authors. Exclusion of studies with White participants was considered, however, many of the studies screened contained implications related to White vs. BIPOC participants that were important considerations and were ultimately included in the search. Additionally, the majority of historical data has percentages of White American cohort participants as high as 82% of N. Removing this data, particularly as it relates to the effects of psychedelics on PTSD, would have been a detriment to this research. Twenty-seven articles were identified and reported on well-designed clinical trials investigating the efficacy of psychedelics - including psilocybin, LSD, MDMA, peyote, and ayahuasca for the treatment of PTSD, mood and anxiety disorders, trauma, and stress-related disorders, and substance-related and addictive disorders as well as in end-of-life care.

Results

Cultural significance and historical use of psychedelics

Cultural practice of psychedelic use by Indigenous Peoples has preceded the introduction of psychedelics to Western science by millennia. For example, Aztec cultures used psilocybin (teonanacatl or "food of the gods") for spiritual, medicinal, and recreational purposes. It was believed to grant shamans magical insight and the ability to heal and diagnose, as well as provide other insights, such as finding solutions to problems, locating objects, or reconnecting with loved ones (George et al. 2020). The current psychedelic renaissance necessitates a critical evaluation of Western practices to incorporate historical knowledge and global perspectives. Inclusive recruitment of participants and researchers is critical to current and future studies (Williams & Labate 2020). Despite its origins, BIPOC are rarely involved in the development of psychedelic clinical research and have not benefited from the positive outcomes of these studies. Furthermore, White-dominant culture has, at times, appropriated Indigenous rituals and ceremonies without proper recognition, further marginalizing and alienating those communities.

Psychedelics in Western Culture

Nutt (2022) states that Western science's introduction to psychedelics began in 1897 when Arthur Heffter isolated mescaline. Albert Hoffman then went on to discover the active constituent, psilocybin, found in "magic" mushrooms in 1958. George et al. (2020) note that while LSD synthesis by Hofmann is significant to the renaissance, the contributions and knowledge of Indigenous Peoples and their practices must be recognized. Despite colonization, ancient customs remain largely intact, and the long-term use of plants, mushrooms and other entheogens like psilocybin, ayahuasca, LSD, MDMA, and ibogaine are effective treatments for depression, anxiety, addiction, and PTSD when combined with psychotherapy and integration.

Williams & Labate (2020) suggest that as psychedelics gain more mainstream awareness, research advances the therapeutic promise of healing trauma and mental disorders. Top universities have launched centers for psychedelic research, and clinicians are trained in patient integration as part of psychedelic-assisted treatments. However, studies lack diversity, equity, and inclusion despite progress and excitement among well-intentioned researchers.

Psilocybin has potential as a powerful therapeutic agent, as evidenced by recent clinical studies. The FDA declared it "breakthrough therapy" for treatment-resistant depression and major depressive disorder. A breakthrough therapy designation is given to drugs that show promising results in clinical trials and have the potential to address a serious or life-threatening condition for which there are no adequate treatments available. This designation provides numerous benefits, including expedited development and review processes, increased support from the FDA, and greater access to resources for clinical trials. A 2022 meta-analysis found large reductions in suicidality from seven psychedelic clinical trials, with psilocybin-assisted psychotherapy used in five. Psilocybin could be a revolutionary therapeutic tool (Jones & Nock, 2022).

Brain activity and mechanisms of action

Psilocybin, a naturally occurring psychedelic compound, elicits profound perceptual shifts and mystical-type experiences. It mimics symptoms of acute psychosis such as ego dissolution, thought disorder, and misperceptions. Psychedelics act on the serotonin system to produce these effects and early studies show that they may weaken the limits of the ego, allowing access to the unconscious and enabling faster processing of emotions (George et al. 2020). According to a study by Dos Santos et al. in 2016, psilocybin acts as a 5HT-2A serotonin receptor agonist. This triggers the release of glutamate, which is thought to be a key mechanism

of action in psilocybin. The interaction between the 5HT-2A and metabotropic 2/3 receptors in the brain cortex is important for the neuropsychopharmacology of classic psychedelics. Psilocybin has been shown to have anti-depressive, anxiolytic, and anti-addictive properties. The expression of 5HT-2A in the cortex is affected in depressed patients, indicating the involvement of these receptors in emotional processing. The authors suggest that 5HT-2A receptor agonism modulates glutamatergic neurotransmission. This activation could increase the expression of brain-derived neurotrophic factor (BDNF) and glial cell-line-derived neurotrophic factor (GDNF) and the size of dendritic spines in cortical neurons. This could enhance neuroplasticity and neurogenesis. For example, anti-depressant treatment in depressed patients normalizes BDNF levels, which decrease in depression. In an animal study, low-dose administration of psilocybin increased neurogenesis in mice hippocampuses after two weeks, while high doses significantly decreased neurogenesis, indicating that the neurogenesis effects of psilocybin are dependent on the dose and time of administration.

Psychedelics, like psilocybin, *unblock* individuals who failed to do so in psychotherapy, releasing blocked memories and associated emotions. Two approaches to clinical research were identified: utilizing neuroimaging in psychopharmacological trials with healthy participants and small investigational clinical studies. Psilocybin decreased blood flow and blood oxygen level-dependent (BOLD) activity in the Default Mode Network (DMN,) specifically in the subgenual cingulate cortex, which manages emotions (Nutt, 2022). Carhartt-Harris et al. conducted fMRI studies that demonstrated psilocybin led to a reduction in brain blood flow and venous oxygenation. This finding supports the notion that neural activity is interfered with and decreased, as observed in animal studies. It is commonly assumed that psychedelics enhance neural activity, but this study found the opposite to be true. Previous studies on animals suggest that the stimulation of 5HT-2A receptors increases GABAergic transmission and pyramidal cell

inability, which could explain the deactivations observed in this study. These results indicate that decreased activity and connectivity in the brain's connector hubs allow for a more unrestricted style of thinking.

Krediet et al. (2020) found overactivity in brain regions associated with depression, led to treatment developments that reduce this activity. A 25-mg dose of psilocybin administered to healthy participants led to experiences of great reward and insight, and many describe it as one of the most important moments of their lives, with the positive benefits lasting years. Further studies explored psilocybin's potential to ease symptoms of various disorders, such as OCD, substance abuse, and end-of-life anxiety and depression. Positive benefits lasting for weeks or months were often associated with mystical-type experiences in two clinical studies. Critics argue that success may be due to integrated therapist input, but double-blind studies suggest therapy plus the active drug is more effective than placebo plus therapy. According to Averill & Abdallah (2022), it is thought that the administration of psilocybin (in oral doses ranging from 10-25mg, with 1-3 sessions spaced out over weeks to months) can result in a reduction of amygdala reactivity. It is also believed that psilocybin can affect DMN activities, resulting in increased divergent thinking and mindfulness-related capabilities. Additionally, psilocybin may increase insightfulness, reduce avoidance behaviors, and help resolve existential distress.

As Nutt posited, psilocybin slows activity in the subgenual cingulate cortex, an area used in depression treatments. It can also turn off the DMN, which is more active in depressed individuals. These changes could allow patients to view a world without depression. Psilocybin can stimulate the 5-HT2A receptor, providing more synaptic flexibility and resetting the brain to a state without depression. Psilocybin may also change pathways between subcortical regions and the frontal cortex, as seen in fMRI scans. According to Carhartt-Harris and colleagues (2012b), altered states of consciousness can enhance mental adaptability by interrupting rigid,

pathological, compulsive, and negative thought patterns in individuals with mental disorders and addiction.

Targeting treatments for PTSD is more complex. The complexity of PTSD means that the use of drugs to target one particular neurotransmitter system (for instance, using selective serotonin reuptake inhibitors to address stress reactivity or beta-blockers to address hyperarousal) may not be enough. Treatment of PTSD could benefit from pharmacological changes that enable people to engage with traumatic events in psychotherapy more effectively, such as creating the capacity for greater psychological flexibility. This could suggest that a different approach to therapy is needed than what is currently available (Krediet et al., 2020).

Williams et al. (2021) found that acute psychedelic effects, particularly acute insight, and lower-intensity challenging experiences, directly affected racial trauma symptoms. The study also showed that psychological flexibility had a direct relationship with changes in racial trauma symptoms and mediated the relationship between acute psychedelic effects and changes in symptoms. These findings suggest that psychedelics' therapeutic effectiveness may be linked to increased psychological flexibility, indicating the potential for it to be a therapeutic target in psychedelic-assisted therapies.

Davis et al. (2021), suggest psychedelics cause brain connectivity changes and induce awe and ego dissolution, leading to psychological flexibility and therapeutic success. Psychological flexibility involves adjusting to different situations, maintaining value-congruency, in accordance with one's values. Studies show that psychological flexibility from psychedelics accounts for reduction in depression and anxiety resulting from mystical-type and insightful experiences, and acute psychedelic effects increase psychological flexibility. Acute

psychedelic effects are effective in reducing racial trauma symptoms, and are a major element of psychedelics as treatment for race-based trauma.

Traditional PTSD treatments

Exposure-based therapy is the undisputed first-line treatment for PTSD. Most PTSD therapies involve exposing patients to their traumatic experience to desensitize them and reduce fear, but 40-60% of patients do not respond well, possibly due to difficulty being emotionally invested or recalling the trauma. A therapist's role is to provide instruction to the patient and offer an understanding of how to make changes. (Krediet et al., 2020).

Prolonged exposure (PE) and cognitive processing therapy (CPT) are effective treatments for PTSD (Ching et al., 2022). Williams et al. (2021) suggest that race is not commonly accounted for in outcome investigations using these methods, and Ching et al. found that Latinx and Asian participants are often underrepresented in these studies. Drop-out rates are higher for these groups, and Asians in North America may be less likely to seek help due to perceived racial discrimination (Spencer et al., 2010).

BIPOC often experience high dropout rates in PTSD treatments, and studies on Eye Movement Desensitization and Reprocessing (EMDR) lack BIPOC participants. There is a lack of effective treatments for racial trauma, and the stigma associated with mental health therapy can limit access for BIPOC. Many BIPOC turn to substances to cope and psychedelics have been linked to reduced mental disorders. However, prior to Williams et al.'s (2021) study, the effects of psychedelics on racial trauma were unknown. Integrating psychedelics into psychotherapy can reduce fear and arousal, build trust and understanding between patient and therapist, and target fear extinction and memory retention (Krediet et al., 2020).

Importance of set and setting

Current research is focusing on the psychological state of a person during treatment, also known as “set,” and implications of the external environment, also known as “setting,” on the efficacy of treatment potential. The phrase "set and setting," which emphasizes the significance of guiding a user towards harm reduction along with considering social and cultural contexts, is often attributed to Timothy Leary. These contexts may encompass mood, attitudes, preparation, personal history, personality, expectations, beliefs about the drug and oneself, as stated by Neitzke-Spruill (2020). Formal training for therapists in psychology and psychotherapy is emphasized for the safety and security of the participants. Sessions conducted in an environment that makes the participant feel safe during the session are of utmost importance (George et al. 2020).

As an example, Neitzke-Spruill suggests the different outcomes resulting from the use of peyote by Native Americans in a religious and spiritual context, compared to the use by White Americans, who often lack a cultural framework for the substance. Native Americans maintain an intentional religious setting, while White Americans often approach peyote use experimentally. Additionally, cultural overtones play a role, as in Western culture, hallucinations are associated with sickness and mental illness, whereas Native American experiences with hallucinations are more closely linked to crossing over into spiritual realms and religious ceremony. According to Zinberg (1994), setting is one of the most crucial and underexplored factors influencing experiences with psychedelics.

Barriers to Racial Diversity in Research

Studies show that psilocybin-aided treatments are effective for trauma, depression, and anxiety, but the lack of BIPOC participants in these studies raises concerns about how applicable the results are. As a result, little data exists on the potential of psychedelics to assist BIPOC.

BIPOC have been historically marginalized in the US by being associated with certain illicit drugs. In the 1950s and 1960s, psychedelics were associated with the White-dominant hippie counterculture, which devalued the collective contributions of BIPOC and they were ultimately vilified by being associated with illicit drug use, violence, and civil disorder. This period saw the appropriation of many aspects of Black, Eastern, and Native cultures, including slang, philosophy, music, fashion, religion, and ceremony. While the hippie movement is credited with introducing psychedelic medicine and influencing American values, the stigma for African Americans remains today and are often still inaccurately assumed to be involved in the sale and abuse of narcotics (George et al., 2020).

The opioid crisis in the U.S. has disproportionately affected White Americans, leading to a national public health emergency and targeted programs to avoid incarceration. In contrast, the crack epidemic of the 80s, which mainly affected African Americans and the poor, was largely neglected, leading to stigma. This segmentation of drugs has associated psychedelics with White culture, as studies show that only 4% of psychedelic users are African American, compared to 20% who are White. However, current trends in ecstasy and other psychedelic use among Black Millennials may be changing perceptions.

Millennials of color are receptive to recreational psychedelic use, but there is a lack of inclusion in clinical drug trials and lingering skepticism among BIPOC of clinical research remains. This is in part due to the long history of unethical and racist medical and research practices -- such as the Tuskegee Syphilis experiments and the sterilization of incarcerated women of color, that have occurred (Katz et al., 2006). Seventeen psychedelic studies between 2000 and 2017, revealed only 2.2% of participants were Black, 2.2% were Latino, 1.5% were Asian, and 4.7% were Indigenous. Traditional screening methods do not account for race-related trauma and leave many BIPOC excluded from potential treatments. More research is needed to

understand the efficacy of psychedelic-assisted therapy in People of Color and the variations of symptoms across different racial groups and racial diasporas.

The prevalence of mental health issues, like depression, anxiety, PTSD, and drug use, among BIPOC suggests that psychedelics may be an effective form of therapy. However, this is only speculation until more People of Color are included in studies. To ensure BIPOC are represented in clinical trials, researchers must employ methods that are sensitive to culture. This could help to counteract any negative views minorities may have about treatment and make them more comfortable in a medical environment (George et al. 2020).

Distinct Characteristics of Race-based Mental Disorders

A US Department of Justice study found that racial trauma affects Black Americans (63%), Latinx Americans (47%), Asian Americans (6%), American Indians/Alaska Natives (5%), and multiracial individuals (4%). Many who experience discrimination do not take action, and around 50% have never had to resort to extreme measures (lawsuits, leaving a job, or relocating) to address racism. Colonialization may contribute to generational trauma experienced by Indigenous Peoples. Despite this, few studies have investigated the prevalence or treatment of racial trauma (Williams et al., 2021).

Michaels et al (2018) suggest that renewed study into psychedelic-assisted psychotherapy has taken a cautious approach, focusing on ethical and safety concerns. The second wave of research renaissance (2000-present) has shown the effectiveness of psilocybin, LSD, ayahuasca, and MDMA in treating depression, addiction, OCD, anxiety, and trauma symptoms, but the small mostly White samples limit the generalizability of findings and exclude People of Color, which goes against US laws requiring varied clinical trial samples.

Racial trauma is an emotional and psychological injury caused by discrimination based on one's race, ethnicity, or skin color. It can lead to severe stress and symptoms such as nightmares, avoidance behaviors, embarrassment, dysphoria, isolation, and changes in mood and cognition. Due to its cumulative nature, it may not meet standard definitions as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) for PTSD (APA, n.d.; Michaels et al., 2018) and can result in comorbid disorders such as major depressive disorder, substance abuse, social anxiety, and psychosis. Michaels and colleagues posit that the DSM-5 does not include race-based trauma within the context or criteria for PTSD at all and suggest that the DSM-5 does not consider cultural implications as an influence in psychopathology in People of Color. Many mental health professionals are not well-trained to recognize and treat race-based trauma, and racial inequity is often linked to PTSD.

Studies show that People of Color experience similar or greater levels of psychological distress as non-Hispanic Whites, yet disparities in diagnosis and treatment can lead to poorer long-term outcomes (Williams et al., 2022; Michaels et al., 2018). For many disorders, including PTSD, substance abuse, generalized anxiety disorder (GAD), and major depressive episodes, Black Americans have comparable or higher prevalence rates than other ethnic groups. Hispanic Americans tend to have a similar rate of substance abuse but a higher rate of GAD than any other ethnic group. For example, 8.03% of Black Americans have PTSD in their lifetime, which is higher than the percentages of Hispanic/Latino Americans (5.59%), Asian Americans (1.84%), or Non-Hispanic Whites (6.45%) Although Asian Americans typically report lower lifetime prevalence rates for most disorders, they experience OCD at a rate similar to that of Black Americans and major depressive episodes at a rate comparable to Black Americans as well (Williams et al., 2022; Michaels et al., 2018). Further research and treatment paradigms must consider People of Color in all stages of research to gain a better understanding of the efficacy of

treatment and improve chances of success (Williams et al., 2022). While the prevalence of mental illness in People of Color is most likely underestimated due to differences in age, socio-economic status, and how people were selected for the studies, data shows that BIPOC experience psychological distress at equal or higher rates than Whites (Williams et al., 2022; Michaels et al., 2018).

Discrepancies in accurate diagnosis among Black Americans make it difficult for them to access treatment, despite comparable incidence rates of OCD and anxiety disorders as other ethnic groups. The lifetime occurrence of major depressive episode is also similar between Black and White Americans, but fewer Black Americans stay in treatment (Michaels et al., 2018).

Psychedelics as Treatment for Race-based Trauma Findings

Williams et al. (2021) conducted a cross-sectional study with BIPOC participants aged 18 or older residing in the US or Canada. The study examined the effects of classic psychedelic use on mental health symptoms resulting from racial trauma. Participants reported on their past experiences with racial trauma and psychedelic use, their memorable psychedelic experiences, and their immediate and lasting effects. Participants in this study reported a lasting decrease in depression, anxiety, and traumatic stress symptoms after using psychedelics. Notably, 58% of participants reported an experience that occurred at least three years ago, indicating lasting effects. 38% of participants reported using a moderate dose, 37% reported a moderately high dose, and 19% reported a high dose, leading to mystical-type experiences. Psilocybin was the most common substance used among participants, accounting for 37%. These results suggest that psychedelics may effectively treat anxiety related to racial trauma and mental health disorders in BIPOC, which can be exacerbated by discrimination and being angry about racism and not

speaking up about it. The study also found that systemic disparities make it harder for individuals with race-based PTSD to find solutions (Williams et al., 2021).

Psilocybin-assisted psychotherapy is effective in reducing symptoms of depression and anxiety in cancer patients and those with PTSD. Younger Asians (18-40 years old) commonly engage in recreational psychedelic use, with evidence suggesting that they use substances to cope with racial discrimination. Asians were overrepresented in a trial of MDMA-assisted psychotherapy for PTSD. Further research should be conducted to understand how psychedelics, including psilocybin, can help alleviate the symptoms of racial trauma among Asians who are using psychedelics. (Ching et al., 2022).

Psychedelics produced a notable decrease in racial trauma symptoms (such as hyperarousal, feeling alienated/isolated, and worries about potential racial negative events) and psychological distress from 30 days before to 30 days after the psychedelic experience, at moderate doses. The study found that greater acute mystical and insightful experiences (like unity/oneness, sacredness, and ineffability) and lowered challenging experiences (like extreme fear, feelings of loss of control or sanity, and physical discomfort) were associated with greater declines in symptoms. However, the study's findings had not been separated by ethnicity and race, and there is a need for more research to investigate the effects of psychedelic use on the aftereffects of racial discrimination, particularly among Asians. Empirical data on the effects of psychedelics on ethnic identity is lacking, particularly among Asians, despite evidence suggesting that a stronger ethnic identity may lead to improved racial trauma symptoms. Strengthening ethnic identity may protect against the negative mental health effects of ongoing discrimination, according to the rejection-identification model. More research is needed to explore this important area of inquiry (Ching et al., 2022).

Of those surveyed, 40.2% indicated psilocybin as their most meaningful psychedelic experience. Doses were mostly moderate (45.7%) or moderately high (32.6%). This research examined whether ethnic identity could be mediated by psychedelics, which had never been tested before. Results from the study showed that, in Asian participants, racial trauma symptoms decreased after their most meaningful psychedelic experience. This finding is the first of its kind to show the potential benefits of psychedelic use to reduce racial trauma symptoms among Asian North Americans. Additionally, a correlation was found between psychedelic doses and intense, personally, and spiritually significant experiences. Analyses revealed that improvements in racial trauma symptoms mediate the connection between insightful experiences and current ethnic identity. However, mystical experiences did not seem to affect ethnic identity directly nor indirectly. This research suggests that insightful psychedelic experiences can play a role in improving ethnic identity and that this could be an additional approach to healing from racial trauma among Asians (Ching et al., 2022).

Jones & Nock (2022) discovered that lifetime psilocybin use is linked to decreased odds of experiencing psychological distress for Hispanic and Asian participants, but not for Black, Indigenous, and Multiracial participants. However, this study does not suggest that psilocybin was ineffective in reducing distress and suicidality among the latter group. The study investigated whether race and ethnicity affected the relationship between lifetime psilocybin use and psychological distress and suicidality, and significant interactions were discovered across all relevant outcomes. Relationships between psilocybin use and distress and suicidality differed significantly among different identity groups, with White participants experiencing the most beneficial effects.

Davis et al. (2021) found that mystical effects were not significantly linked to changes in racial trauma symptoms, indicating their potential lesser importance for therapeutic benefits in

People of Color. Greater acute insight effects and lower challenging effects were directly related to changes in psychological flexibility, suggesting the significant role of acute subjective effects of psychedelics in influencing mental health outcomes. There was a direct relationship between psychological flexibility and changes in racial trauma symptoms, suggesting its potential as a factor contributing to mental health outcomes apart from psychedelic use. These findings support psychological flexibility as a target for race-based trauma.

Discussion

Limited representation of BIPOC in psychedelic research and the under-diagnosis of mental health disorders among People of Color call for innovative approaches to address race-based trauma and mental health issues. Williams et al. (2021) found that BIPOC individuals are less likely to meet certain mental disorder criteria but experience more persistent symptoms than White Americans. Further study is needed to understand the unique psychological mechanisms underlying the therapeutic benefits of psychedelics, like psilocybin, for BIPOC individuals. The FDA's breakthrough therapy designation for psilocybin has significant implications for the development of psilocybin-based treatments, including those for race-based trauma related conditions. It may also destigmatize psilocybin as a therapeutic tool and increase public acceptance of psychedelic-assisted therapy.

From a biological and physiological standpoint, humans, regardless of race, are identical. However, our individual experiences shape the trauma we endure. In the United States, race can significantly impact the experiences of BIPOC individuals, resulting in trauma that is particularly challenging, harrowing, and potentially life-threatening. To uncover effective treatments for mental illness, it is crucial to generalize findings from psychedelic research across the entire population. However, without understanding how racism manifests in the minds and bodies of

BIPOC individuals, and how it leads to trauma, the full therapeutic potential of psychedelics remains unknown.

Nietzke-Spruill (2020) suggests that set and setting are crucial for meaningful and healing psychedelic experiences among BIPOC individuals. To create appropriate clinical protocols and harm-reduction strategies, it is necessary to recognize the differences and specific requirements for managing care related to race-based trauma and PTSD. While previous studies on White cohorts provide some guidance, the unique effects of discriminatory experiences on mental health in BIPOC communities remain unknown without BIPOC representation. Skilled therapists can use set and setting, which refer to the individual's mindset and psychological state during psilocybin-assisted therapy, to support individuals with race-based trauma and PTSD by preparing them for the experience, establishing trust, and cultivating a positive mindset.

To support BIPOC individuals, a culturally sensitive, safe, and supportive setting is crucial. This includes selecting a comfortable therapy location, removing any triggering stimuli, providing culturally responsive support, and culturally pairing participants and researchers. By combining set and setting, the therapeutic process prioritizes harm reduction from the start, and the potential benefits of psilocybin-assisted therapy can be enhanced. A culturally-responsive set and setting can also reduce re-traumatization risk and ensure a positive and supportive therapeutic experience.

Ching et al. note that racial trauma, which is connected to ethnic identity, differs from other forms of trauma. The cumulative effect of chronic exposure to discrimination may lead to internalized racism, resulting in negative self-perception and self-destructive behavior (Williams et al., 2022). Racial trauma attacks the victim's core identity, which cannot be altered – leading to shame, guilt, and unhealthy coping mechanisms that hinder emotional processing and exacerbate

PTSD symptoms (Bannister et al., 2019). Shame may also contribute to social stigma, making it harder for survivors to seek care.

Psilocybin binds to serotonin receptors, inducing altered states of consciousness and profound shifts in mood, cognition, and perception. Studies on psilocybin's potential in treating PTSD show a reduction in anxiety, depression, and avoidance behaviors, common in those experiencing race-based trauma. Psilocybin enhances emotional processing and fosters connection, counteracting feelings of disconnection from discrimination (Williams et al., 2021; Ching et al., 2022; Davis et al., 2021). Different dosages may target various aspects of racial trauma -- high doses may induce mystical experiences and feelings of unity – deepening connections and reducing shame; lower doses may bolster trust between patient and therapist and enhance emotional processing, but more research is needed to determine optimal dosages and their applications.

Psychological flexibility refers to the ability to adapt to changing situational demands while staying true to one's values and goals (Davis et al., 2021). It involves being present in the moment, open to experiences, and committed to acting towards values-directed behavior. Studies have suggested that psilocybin may strengthen psychological flexibility and can be a useful tool in coping with race-based trauma. When individuals are psychologically flexible, they are better able to manage the distressing emotions, thoughts, and sensations that arise from discriminatory experiences. They are less likely to avoid or suppress these experiences, which can exacerbate symptoms of PTSD and internalized racism. Instead, they are more likely to engage in activities that promote well-being and connectedness, such as social support, self-care, and advocacy. Moreover, psychological flexibility can also help individuals maintain their sense of identity and values, which are often threatened by racism and discrimination. By remaining connected to their

values and beliefs, individuals can counteract the negative messages and stereotypes often associated with racial discrimination.

Psilocybin may be a promising treatment for race-based trauma, but more research is needed, especially among BIPOC populations. Psilocybin-assisted therapy has shown rapid and long-lasting effects on symptoms associated with race-based trauma but requires proper use under the guidance of a trained professional in a controlled setting. Cultural sensitivity is crucial in its development and implementation, and patients must be screened and monitored for potential risks. Legal and regulatory barriers can hinder progress in understanding its potential therapeutic effects. More research and a culturally sensitive approach are needed to ensure safe and effective treatment for BIPOC populations.

Early research indicates that psilocybin is an effective treatment for race-based trauma and PTSD. However, current evidence is limited by the lack of studies with diverse participants, and the findings from White-majority studies cannot be generalized to the entire population or used to extract specific outcomes for race-based trauma and PTSD.

Conclusion

Limited BIPOC recruitment in psychedelic research, coupled with under/misdiagnosis, affects access to treatment. Lack of diversity means BIPOC experiences may not be fully understood, despite higher rates of mental health issues among some groups (Williams et al., 2021, 2022; Michaels et al., 2018). Reasons for underrepresentation include mistrust from past abuses (Katz et al., 2006), lack of diversity in research workforce, and reduced willingness to seek treatment/participate in trials.

Traditional PTSD treatments, while effective for some, may not work for everyone. Psilocybin shows promise as a treatment for race-based trauma and PTSD, with decreased

symptoms reported at moderate to high doses (Williams et al., 2021; Ching et al., 2022). Combining psilocybin with psychotherapy can increase psychological flexibility, which is important for coping with race-based trauma (Davis et al., 2021). Racism poses an existential threat to one's identity, and increased psychological flexibility can reduce reactivity and hyperarousal in the face of negative experiences that challenge one's values. Further clinical research is needed to fully understand the long-term effects of psilocybin on race-based trauma and PTSD. This research can help inform the development of new treatment options for individuals who are not responding to traditional treatments and who may benefit from alternative approaches. Additionally, research in this area can help increase our understanding of the complex relationship between trauma, race, and mental health, which can ultimately inform more effective and culturally-sensitive treatment approaches.

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