

**Attitudes towards psychedelics and psychedelic-assisted therapy among
South African mental health care providers**

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A research report submitted to the Faculty of Humanities, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Arts by coursework and research report in the field of Psychology.

April 2021

Declaration

I declare that:

This is my own, unaided work. It is being submitted for the Degree of Master of Arts at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other university.

Signature:

A handwritten signature in black ink, appearing to read 'Kirsten', is written over a horizontal line. The signature is contained within a light gray rectangular box.

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Date: 30/04/2021

Acknowledgements

Sincerest thanks goes to my supervisor, Katherine Bain, for her abundant support and encouragement throughout the research process.

I am also indebted to the mental health care professionals who participated in this study, for their openness and willingness to share their experiences and insight.

Finally, my deepest appreciation goes out to my family and friends for their superhuman patience, wisdom and support along the way.

Abstract

Psychedelics and psychedelic-assisted therapies (PAT) have garnered considerable research attention in recent years, inviting the possibility that the use of psychedelics could become integrated into psychotherapeutic practice. However, the perspectives of mental health care providers (MHCPs) around such therapies are almost entirely unknown. This mixed-methods study aimed to investigate MHCPs' attitudes towards psychedelics and PAT, and determine whether any participant characteristics were predictive of these attitudes. Results indicated that participants held ambivalent attitudes, and that these were influenced by tensions between dominant and resistive discourses, particularly those centred around prohibition and pathology. Participant use of psychedelics/psychedelic-like substances (PLSs), as well as participant awareness of psychedelics/PLSs, predicted more favourable general attitudes towards psychedelics and PAT. Participant exposure to negative experiences with any drugs predicted more negative attitudes towards PAT in the context of disorders or severe symptoms of mental illness.

Table of Contents

Cover	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
Table of Contents	v
Chapter 1: Background	1
Introduction	1
1. Rationale & Aims	2
2. Literature Review	3
3. Research Questions	15
Chapter 2: Methods	18
1. Design	18
2. Sampling	24
3. Procedure	27
4. Instrument	28
5. Ethical Considerations	31
6. Data Analysis	33
Chapter 3: Results & Discussion	36
1. Descriptive Statistics	36
2. Factor Structure	54
3. Internal Consistency	57
4. Multiple Regression Analysis	58

5.	Chi-Square Tests of Association	68
6.	Themes & Discourses in MHCPs' talk about psychedelics and PAT	82
7.	Answering the Research Questions	93
Chapter 4: Conclusion		100

Chapter 1: Background

In recent decades, despite their controversial status as illicit drugs with no therapeutic value, psychedelics have received substantial research attention, predominantly in the context of psychotherapy (Schenberg, 2018). Classical¹ psychedelics and other psychoactive substances with psychedelic properties seem to hold promise as potential treatments for a range of mental illnesses. Recent research has shown psilocybin to be effective in treating various mood disorders, OCD and end-of-life distress (Agin-Liebes et al., 2020; Carhart-Harris & Goodwin, 2017; Griffiths et al., 2016; Ross et al., 2016). Administering Lysergic acid diethylamide (LSD) to patients with alcohol dependence and unipolar mood disorders has been demonstrated to consistently result in remission or significant reduction of symptoms (Carhart-Harris & Goodwin, 2017; Dos Santos et al., 2016). Ketamine has shown potential in treating depressive disorders (Lee, Della Selva, Liu, & Himelchoch, 2015; Marcantoni, Akoumba, Wassef, Mayrand, Lai, Richard-Devantoy, & Beauchamp, 2020), and MDMA seems to be effective in reducing symptoms of or even eradicating treatment-resistant PTSD (Mithoefer et al., 2011; Schenberg, 2018; Sessa et al., 2019). Such findings have resulted in the United States Food and Drug Administration (FDA) declaring psilocybin and MDMA to be ‘breakthrough therapies’, a designation that greatly accelerates the process of approving these substances for medical use (Reiff et al., 2020). Ketamine is, in some contexts (including South Africa) available for off-label use for treating major depressive disorder².

On the whole, the relationship between psychedelics and society, however, has long been characterised by a combination of fear, myth and conflicting information. Prior to the late 1960s, research into using psychedelics as therapeutic aides had been accelerating, and at its peak thousands of studies had been published, many showing promising results (Grinspoon & Bakalar, 1981). However, along with this scientific interest came the spread of substances such as LSD from laboratories and universities to the general public (Dyck, 2006). Sensationalist media coverage that reduced psychedelics to deadly drugs of abuse, combined with users being associated with anti-war and anti-establishment sentiments, eventually culminated in the US government passing the Controlled Substances Act in 1970. This not

¹ Psychoactive compounds that act on serotonin receptors and generally occasion changes in states of consciousness (Chi & Gold, 2020)

² Examples in South Africa include <https://ketamineclinics.co.za/> and <https://www.lighthouseclinic.co.za/>

only prohibited recreational use but also halted research, and by the 1980s the topic had been abandoned globally (Dyck, 2006). Today, while research into the therapeutic potential of psychedelics has seen something of a renaissance, little is known about whether attitudes among experts or the general public have changed in response to this shift.

1.1 Rationale & Aims

Perspectives on the potential of psychedelics as medicine among mental health care providers such as psychiatrists and psychologists are almost entirely unknown, apart from a small published survey in the US (Barnett et al., 2018). No research currently exists on the topic of attitudes towards PAT or of psychedelics as a whole in South Africa. As the potential gatekeepers of psychedelic-assisted therapy, research is needed to determine the attitudes of psychiatrists and psychologists towards the safety, legality and effectiveness of these substances. In the near future, certain PATs are likely to become available to mental health care providers (MHCPs) in the US (Haridy, 2020). In order to understand the potential promoters and barriers to access and uptake of these therapies in a South African context, it is imperative that the attitudes of local psychiatrists and psychologists are determined. As such, this study will endeavour to contribute to the growing body of knowledge around PAT by exploring not only what MHCP's attitudes towards PAT are, but also what has shaped these views, how meanings of psychedelics and PAT are constructed for these individuals, and what discourses they draw on in explaining these views. This research will constitute the first of its kind in South Africa, where almost all PLSs remain prohibited but where there seems to be growing support for challenging these laws and integrating such substances into therapeutic practice (Keeton, 2018; Kloten, 2017). Ultimately, then, the purpose of this study, as an initial exploration, is to contribute to establishing the foundations of a local theoretical knowledge base around psychedelics and PAT. In so doing, possible implications for therapeutic practice of MHCPs in South Africa may also emerge.

1.2 Literature Review

Psychedelics Before 1970

Though often dismissed as dangerous recreational habits for rebellious youths, psychedelics and substances with psychedelic properties have a well-established history in cultures across the globe, with these substances having long been used for spiritual and ritualistic purposes (Merlin, 2003). The term ‘psychedelic’ translates from the Greek for ‘mind-revealing’, and like dreams, the altered states of consciousness induced by these substances have been viewed by various cultures as conduits to conversing with ancestors or entering the spirit world (Carhart-Harris & Goodwin, 2017). For instance, mushrooms that contain the compounds psilocybin and psilocyn (usually referred to as psilocybin mushrooms) have long been used in the religious ceremonies of numerous Central and South American cultures (Matsushima et al., 2009). There is archaeological evidence that suggests the psychedelic compound mescaline, found in some species of cactus throughout the Americas, has been used medicinally and ritualistically for more than five thousand years (El-Seedi et al., 2005). The Iboga plant, containing the psychedelic-like substance ibogaine, has been used in equatorial Africa in spiritual and physical healing rituals (Fernandez & Fernandez, 2001). Across South America, a solution containing the psychedelic dimethyltryptamine (DMT) along with monoamine-oxidase inhibitors (MAOIs) remains a crucial part of spiritual ceremonies and rites of passage (Riba et al., 2006).

Despite these substances remaining of vital spiritual and medicinal importance to various cultures, the interconnectedness of the world has also led to psychedelics being used far beyond their original locations, with psilocybin mushrooms becoming particularly widespread in recreational settings (Schenberg, 2018). In the 1930s the West also saw the accidental synthesis of the psychedelic LSD by a chemist in Switzerland (Hofmann, 1980). This discovery, along with its inventor’s proclivity for self-experimentation, eventually resulted in curiosity among social science researchers about the drug’s strange properties that resembled those of naturally-occurring psychedelics. Researchers became interested in their potential to help treat an array of mental illnesses, and from the mid-1950s research into psychotherapy using psychedelics proliferated: a range of international conferences were organised, scores of books were written, and more than one thousand academic articles were published, comprising over forty thousand participants in Europe and North America (Grinspoon & Bakalar, 1981). Around the same time, it was not uncommon for mental health

professionals to administer LSD in their clinical practices (Dyck, 2015). For psychoanalysts, the states brought on by the drug resembled dreaming, and could be investigated as a similar path to the unconscious, with the advantage of patients remaining conscious throughout (Swanson, 2018). For psychiatrists, the apparent effectiveness of a single dose of LSD in treating alcoholism was astounding (Dyck, 2015; Grinspoon & Bakalar, 1981; Liester, 2014). Around the same time other psychedelics, notably psilocybin and to a lesser extent mescaline, were investigated in terms of their effects on wellbeing and behaviour change (Leary et al., 1965; Savage et al., 1964).

Prohibition

The acceleration of scientific interest in psychedelics was, however, accompanied by the emergence of entire subcultures that revolved around recreational use of these substances, and LSD in particular exploded onto black markets in the US in the 1960s (Dyck, 2015). The ‘hippie’ subculture that was characterised by recreational psychedelic use was closely associated with outspoken anti-government, anti-war political views, and classical psychedelics themselves soon came to represent social disobedience (Dyck, 2006). Simultaneously, sensationalist reporting on the dangers of psychedelics flooded the general public (Dahlberg et al., 1968). The ensuing apprehension about the public’s access to these powerful substances and the risks this posed, combined with the particular subcultural image of psychedelics users, created something of a perfect storm for restrictive policies to be installed. This, as well as a myriad other complex sociohistorical forces, culminated in the US passing the Controlled Substances Act in 1970, which criminalised psychedelics along with a variety of other substances (Dyck, 2006). In spite of vocal criticisms from researchers of ‘throwing the baby out with the bathwater’, the act designated these substances to pose harm, to have high potential for abuse, and to possess no therapeutic benefits (Courtwright, 2004). By the 1980s, despite not having been explicitly banned, all scientific inquiry into PAT in the US had ceased, and obtaining funding and approval became practically impossible (Tupper et al., 2015). South Africa, and indeed most of the world, followed suit. Although officially legislated in 1992 as part of Drugs and Drugs Trafficking Act, in South Africa the prohibition of various substances including psychedelics had been “generally accepted” long before the proclamation of this act (Fellingham et al., 2012, p. 79).

Research Renaissance

As a result of the US political climate slowly changing course, and the first cracks in the global War on Drugs beginning to appear, research into PAT began to see a resurgence, with human research beginning in the 1990s and (Schenberg, 2018). Studies conducted during this ‘renaissance’ can be broadly divided into research involving on classical psychedelics, and that involving substances that have psychedelic-like properties (hereafter referred to as psychedelic-like substances or PLSs). The distinction between these groups centres largely around their neural mechanisms of action. Classical psychedelics, which include LSD, DMT, mescaline and psilocybin, act principally through agonism of a variety of 5-hydroxytryptamine (5-HT) receptors, leading them to be labelled serotonergic psychedelics (Dos Santos, et al., 2016). Contrastingly, substances such as MDMA, ibogaine and ketamine overlap somewhat with psychedelics in their effects, but are classed, respectively, as entactogens, dissociative psychedelics and dissociatives. These have more diverse neural mechanisms of action compared with classical psychedelics (Brown, 2013; Majić et al., 2015). For our purposes, this investigation will look specifically at classical psychedelics, ketamine and MDMA, as, of the substances discussed, these are the most widely researched for PAT, would likely be the most recognisable to mental health professionals and laypeople alike, and have garnered considerable news and entertainment media attention (Chi & Gold, 2020; Reiff et al., 2020; UK Drug Policy Commission, 2010).

The so-called ‘psychedelic renaissance’ has brought with it more stringent methodological considerations when conducting human research, leading to a general improvement in the reliability and validity of data (Reiff et al., 2020). Various reviews have been conducted on the topic in recent years, using strict criteria as to which studies can be included. One such review of 19 studies investigating therapeutic use of mescaline and LSD found significant decreases in symptoms of unipolar mood disorders (Rucker et al., 2016). Moreover, a series of double-blind randomised controlled trials (RCTs) showed “rapid, marked, and enduring anti-anxiety and depression effects” in participants following a single psilocybin administration (Carhart-Harris & Goodwin, 2017, p. 2107). Furthermore, psilocybin has consistently yielded remarkable reductions in depression and anxiety symptoms among terminally ill patients (Agin-Liebes et al., 2020; Griffiths et al., 2016; Ross et al., 2016). Recently, the first RCT to compare psilocybin with a conventional antidepressant, escitalopram, was conducted (Carhart-Harris et al., 2021). Researchers compared standard daily doses of escitalopram to two doses of psilocybin over six weeks,

and found no significant differences in antidepressant effects between the psilocybin and escitalopram groups. This suggests that in this sample, two doses of psilocybin, here functioning as a pharmaceutical only (not in conjunction with psychedelic therapy sessions), was as effective as daily doses conventional antidepressants. The potential implications of this for modern psychiatry are striking. However, caution is required in interpreting these findings; the study was the first of its kind, with a sample of only 59 participants, and as such, replication studies in larger, more representative samples are required.

Other findings include reductions in depressive symptoms after ingestion of DMT-containing Ayahuasca, decreases in OCD symptoms after ingestion of psilocybin, and remission of alcohol dependence after ingestion of LSD (Carhart-Harris & Goodwin, 2017; Dos Santos et al., 2016; Palhano-Fontes et al., 2015; Fuentes et al., 2019). In 2018, based on these and other promising findings (for extensive reviews see Chi & Gold, 2020; Reiff et al., 2020), the US FDA designated psilocybin as a ‘breakthrough therapy’ in treating depression, meaning the process for approving the substance for medical use has been greatly accelerated (Reiff et al., 2020).

It is not only these classical psychedelics that have shown promise in treating mental illness. MDMA is a substituted amphetamine with a shorter effect duration that produces perceptual aberrations rather than frank hallucinations, accompanied by intense euphoria, a heightened sense of insight and empathy, reduced anxiety, and enhancement of visual and auditory perception (Amoroso & Workman, 2016; Sessa et al., 2019). Research using MDMA has largely focused on treatment of PTSD, with promising results. A 2010 study, for instance, examined the effects of MDMA as an adjunct to psychotherapy for patients with treatment-resistant PTSD (Mithoefer et al., 2011). The study compared symptom reduction using psychotherapy alone to psychotherapy using MDMA, and found that more than 80% of patients in the MDMA and therapy group no longer met the DSM criteria for PTSD, compared with a quarter of the control group. At follow-ups one and six years after treatment, this result was maintained, in the absence of any further MDMA sessions. Though this study was limited by its small sample size, a series of later studies showed similar results (Schenberg, 2018; Sessa et al., 2019), and in 2013 the US FDA deemed MDMA-assisted psychotherapy to be a ‘breakthrough therapy’. Phase 3 trials are currently underway at multiple sites in the US, meaning MDMA-assisted therapies could become available to the public in the next two years (Bahji et al., 2019).

Neurochemistry

These promising findings relate both to the neurochemical changes occasioned by these drugs, and to the therapeutic process and setting in which they are ingested. Classical psychedelics produce profound changes in perception, consciousness and mood, largely by acting on 5-HT serotonin receptors (Majić et al., 2015). Large doses of classical psychedelics typically produce any combination of perceptual aberrations, synaesthesia, changes in temporal and spatial perception, hallucinations, and lowered ability to control cognition. These effects can be accompanied by subjective states of depersonalisation, derealisation, empathy, anxiety, insight, trust, connection to the mystical, feelings of openness and oneness, and a multitude of affective states (Carhart-Harris et al., 2018; Majić et al., 2015; Nichols, 2016). A variety of changes in brain function seem to underly these effects and contribute to the utility of classical psychedelics in therapeutic contexts. A comparison has been drawn between how these substances and traditional antidepressants, such as SSRIs, work to combat depression. While both SSRIs and classical psychedelics act on 5-HT receptors, they seem to produce antidepressant effects via distinct processes. SSRIs seem to function in part by reducing limbic system activity, which in turn reduces symptoms such as aggression, anxiety, impulsivity, and stress levels, leading to increased resilience as well as the emotional ‘blunting’ often reported by users (Carhart-Harris & Goodwin, 2017). Classical psychedelics, on the other hand, increase 5-HT_{2A} signalling, resulting in perceived increased sensitivity to one’s environment and in emotional release, while decreasing rigid thinking (Carhart-Harris & Goodwin, 2017). Combining these effects with psychotherapy could, Carhart-Harris and Goodwin (2017) suggest, be responsible for the reductions in depression seen in PAT.

Other mechanisms of action include potential neural plasticity, with spinogenesis (new growth of dendritic spines), neuritogenesis (growth of neurites) and new synapses being recorded in rodents after ingestion of psychedelics (Ly et al., 2018). Additionally, psychedelics cause reduced activation of the brain’s Default Mode Network, involved in rumination and mind-wandering and associated with social anxiety and depressive disorders (Guo et al., 2014; Killingsworth & Gilbert, 2010; Maresh et al., 2014), leading many to postulate that this also plays an important role in PAT (Carhart-Harris et al., 2012; Palhano-Fontes et al., 2015; Speth et al., 2016).

MDMA, on the other hand, likely achieves its therapeutic effects through enabling memories of trauma to be reconsolidated, and facilitating fear extinction that is sustained via

learning (Feduccia & Mithoefer, 2018). MDMA reduces the perceived unpleasantness of memories, allowing traumatic events to be recalled in the absence of the usual undesirable emotions associated with them, which in turn allows new perspectives on the traumatic event to be developed (Feduccia & Mithoefer, 2018). Moreover, MDMA increases the release of oxytocin, a neuropeptide that increases learning and memory in situations of social reinforcement, and decreases anxiety. This could explain how novel perspectives on traumatic memories endure for extended periods after the actual ingestion of the substance (Feduccia & Mithoefer, 2018).

Therapeutic Process

The process of therapy in PAT, however, is often considered to be similarly as important as these neural mechanisms in determining the processes by which psychedelics are able to reduce various symptoms of mental illness. Crucially, in contrast to traditional psychiatric medications, the administration of classical psychedelics, ketamine or MDMA does not occur on a regular basis. The process of therapy involves very few ‘active’ sessions wherein the substance is ingested (Schenberg, 2018). In the case of MDMA and classical psychedelics, ‘preparatory’ sessions take place prior to an active session, in order to determine the goal of the active session and ready the patient for the likely effects they are likely to experience, and prepares patients to manage a possible challenging experience. ‘Integration’ sessions take place after an active session, and involve the therapist and patient exploring feelings, thoughts and memories brought up during the active session, and how these are connected with enduring psychological challenges the patient faces in daily life. The active session, in which the patient ingests the substance, generally involves little interaction between clinician and patient, with the latter being asked to pay attention to their inward experience. They are however also able to communicate with the clinician during this experience, and are observed closely for the duration of the substance’s effects.

Significantly, unlike established psychiatric treatments, the purpose of consuming the drug is not to stabilise a theoretical imbalance in neurochemistry. Rather, the intense short-lasting changes to the patient’s emotions and cognition are harnessed to facilitate creation of new perspectives on psychological challenges, as well as gain insight into how dysfunctional beliefs and thought patterns are sustained in daily life (Schenberg, 2018). In this way, such therapies are able to exploit intense temporary experiences in order to identify and explore the root of various psychological difficulties that result in or maintain symptoms. The

absence of a need for daily ingestion of a substance means that many of the usual issues with the use of chronic psychiatric medication are circumvented, including dependence and later withdrawal, side effects and non-adherence (Schenberg, 2018).

Further, in contrast with many traditional psychiatric medicines, MDMA and classical psychedelics show positive results in treating a variety of different mental illnesses (Chi & Gold, 2020), which could mean that the need to sustain the sometimes precarious distinctions between mental illnesses carries less importance. DSM and ICD classification systems have consistently faced criticism for being overly rigid and sometimes arbitrary in how disorders or groups of disorders are differentiated from one another, with critics arguing for a dimensional system of classification that focuses on treatment of symptom clusters rather than discrete disorders (Hengartner & Lehmann, 2017; Pickersgill, 2014). As such, PAT has the advantage of bypassing the need for strictly categorical approaches to psychiatric treatment, in accordance with suggested changes to current diagnostic classification systems (American Psychiatric Association (APA), 2013; Pickersgill, 2014; Schenberg, 2018).

Safety

The optimism sparked by the possibilities of PAT must be appropriately balanced, however, with a discussion of potential safety concerns around psychedelics. Purported dangers of MDMA and classical psychedelics have been a popular topic in news media for decades (Hughes et al., 2010; UK Drug Policy Commission, 2010), and it is crucial here to distinguish where sensationalism ends and scientific findings begin. A number of studies have investigated the potential negative effects of these substances. One review looking at RCTs using psilocybin from the period 1999 to 2008 found no long-term adverse effects, and short-term effects (headache and fatigue) were rated by participants as minor and resolved within a few weeks (Chi & Gold, 2020). No change was found in prolonged psychosis, persisting perceptual disorders or drug-seeking behaviours. Similar RCT data on LSD found mild side effects in some participants (paranoia, delusional thinking) but these were transient, and overall enduring positive effects were still reported by these participants (Chi & Gold, 2020).

A further safety concern with LSD is Hallucinogen Persisting Perception Disorder (HPPD). This is an extremely rare disorder encompassing a range of symptoms that involve re-experiencing some perceptual aspect of the psychedelic state, usually in the visual domain, after the effects of the substance have dissipated (APA, 2013; Martinotti et al., 2018). The

disorder is most common following recreational LSD use, but has also been reported after use of other classical psychedelics and MDMA (Litjens et al., 2014; Martinotti et al., 2018). While the exact prevalence of this disorder is not known, HPPD is diagnosed more often in those with pre-existing psychological problems and current substance use. Martinotti et al. (2018), in an extensive review of the literature, suggest that in many individuals, the disorder could be accounted for by “a heightened awareness of and concern about ordinary visual phenomena, which is supported by the high rates of anxiety, obsessive-compulsive disorder, hypochondria, and paranoia seen in many patients” (p. 13). Despite its rarity in clinical settings, this condition should be further explored in relation to developing safety guidelines for psychedelic-assisted psychotherapy (Litjens et al., 2014).

A particular focus on MDMA here warrants further attention, given the concern for safety that has proliferated in public understanding (Murji, 2020; Saunders, 1998). MDMA is particularly difficult to study outside clinical settings. Recreational MDMA is often impure, consumed in conjunction with other drugs and in contexts that increase physiological side effects of the substance (for instance, dancing in hot nightclubs) (Schifano et al., 2003; Sessa et al., 2019). Even so, a study reported the mortality in Wales and England over three years as only three deaths per year, despite the quarter of a million people who consume the drug every weekend (Schifano et al., 2003).

In clinical contexts, where the substance is pure and physical health is monitored, no deaths have occurred among the thousands of participants involved (Sessa et al., 2019). Indeed, earlier studies that raised concerns of neurotoxicity, specifically in relation to memory loss in long-term recreational users (Croft et al., 2001; Parrott, 2013), have been criticised on methodological grounds. Research that is methodologically sound (placebo-controlled, prospective studies with pure MDMA) has consistently found physiological effects of increases in cardiovascular markers (heart rate, blood pressure) and temperature, but no memory function changes (Dumont & Verkes, 2006). Indeed, it seems that when confounding factors are controlled for and the drug is used in isolation, there is a complete lack of evidence for MDMA neurotoxicity (Halpern et al., 2004) or persisting neurocognitive problems (Sessa et al., 2019).

As such, although MDMA occasions more physiological side effects than classical psychedelics, these are transient and not medically concerning in participants without pre-existing cardiovascular problems (Chi & Gold, 2020; Vizeli & Liechti, 2017). Nevertheless,

specific caution has been advised for individuals with such pre-existing conditions, and more longitudinal, methodologically sound research is required to determine potential adverse effects of MDMA in clinical settings. However, as is pertinent in developing any new treatment, any possible risks of use need to be balanced with potential therapeutic benefits.

Attitudes to Psychedelic Substances

A lack of research into attitudes towards psychedelics means it is unclear whether societal beliefs correspond with the scientific evidence available, and what other factors could influence these attitudes. However, looking at studies conducted on attitudes towards illegal drugs more generally may give some indication of factors that influence attitudes towards these substances. Firstly, there seems to be an association between substance use and religiosity, though the nature of this link is unclear. One paper that analysed data from over 17 000 participants in the US found that religiosity was strongly associated with a lower likelihood of tobacco, cannabis and prescription drug use (Ford & Hill, 2012). This association was largely accounted for by participants' and their peers' attitudes towards substance use. Other studies have also found religiosity to be negatively associated with cannabis use among young people (Jeynes, 2006; Longest & Vaisey, 2008; Nonnemaker et al., 2003). One study investigating the nuance of this relationship found that religious participation (attendance at worship services, for instance), but not internalisation of religious norms and beliefs, was associated with lower cannabis and other substance use in general, including psychedelics (Bartkowski & Xu, 2007). Overall, although religiosity seems to be associated with lower substance use, it is unclear what the specific relationship between religiosity and attitudes towards substance use is. Moreover, no studies were found that investigated psychedelics in isolation, and it is possible that these substances, given their historical spiritual use, could have a different association with religiosity compared with other illegal drugs.

Other factors that may influence attitudes include personal experience with psychoactive drugs more generally, including alcohol and tobacco. For instance, one study found that among almost 3 000 adolescents in the UK, the most positive attitudes towards illegal drugs were expressed by participants who drank alcohol and smoked cigarettes regularly, and conversely, the most negative attitudes were found among those who did not regularly smoke cigarettes or drink alcohol (Best et al., 2000). Additionally, political climate seems to affect attitudes. Looking at a nationally representative sample of over 20 000 people

in the US between 1975 and 2006, Nielsen (2010) found substantial changes in attitudes over time. Respondents were asked whether they supported cannabis legalisation, taken as a general indicator of liberal views on drugs. The authors found that although the majority of respondents were still in favour of continuing cannabis prohibition in 2006, levels of support for legalisation were “similar to those in the late 1970s when marijuana was almost decriminalised at the federal level” (Nielsen, 2010, p. 483). Respondents were significantly more likely to oppose cannabis legalisation during the War on Drugs periods under presidents Reagan and Bush, compared to other periods with less political attention being focused on drugs (Nielsen, 2010). Political affiliation was also found to play a role, with republican and politically conservative respondents being more likely to be opposed to cannabis legalisation compared with democrats and liberals (Nielsen, 2010).

The Role of Media

Despite the relative safety of classical psychedelics and MDMA, the dangers of psychedelics and other illegal drugs have long been a hot topic for news and entertainment media (Saunders, 1998; Murji, 2020), and still constitute one of the most widely used themes in news articles, online chat rooms, magazines, television and film (Lancaster et al., 2011). However, much of this content is sensationalised and exaggerated, and even news articles are rarely based on statistical data and reliable knowledge sources (Bracco, 2019). Though the news backlash against psychedelics began in the 1960s, even into the turn of the century news media coverage of illegal drugs in general had become no more rigorous. A study looking into the UK media’s reporting on illegal drugs in the late 1990s found that on the whole, “print media do not have any quality control mechanisms that apply to the reporting of specialist areas such as illicit drugs and their use” (Coomber et al., 2000, p. 223). The authors suggested that in the case of illegal drugs, because the general public is particularly misinformed about the topic, sensationalism and anecdotes in reporting can easily be treated as fact, while escaping scrutiny (Coomber et al., 2000). The question, then, is what effect this misinformation has on public opinion and societal discourses around illegal drugs like psychedelics.

A longstanding debate exists as to what influence media has on its audience in terms of changing attitudes and behaviour. The consensus seems to be that this effect is substantial, though mediated by individual audience member characteristics (Scheufele, 1999; Scheufele & Tewksbury, 2007). More pertinent here, however, is the mechanisms by which societal

attitudes towards a topic such as illegal drugs are affected by media. Lancaster et al. (2011) describe four functions of news media in influencing audiences about illegal drugs. First, media plays a role in agenda setting. This entails defining which issues are important to engage with and directing the public's attention to that particular topic. Not all topics can be always be paid attention to, so news agencies must determine what is 'newsworthy'. Importantly, however, what is newsworthy often does not relate to any measure of the size of the issue in society, but is still of greater importance to audiences. Indeed, research suggests that public concern correlates most closely with the amount of media attention given to a social topic such as drug use, rather than with the actual magnitude of the issue in society (Beckett, 1994). This mechanism can be seen with regards to early coverage of psychedelics. Despite the relatively small impact of these substances on society in terms of harm, risk and damage in comparison to other social issues (Chi & Gold, 2020), the supposed dangers of psychedelics garnered considerable news attention from the 1960s onwards, setting the agenda that this was an important social issue to be aware of.

Secondly, Lancaster et al. (2011) describe media as framing public discourse around certain topics. Framing, in communication literature, is defined as selecting a few aspects of a topic and placing considerably more emphasis on these aspects than on others, thereby promoting a specific interpretation, moral evaluation, or definition of an issue (Entman, 1993). With regard to illegal drugs, framing is often around essentialising drug users either as 'victim' or as 'villain', categorisations which have now become common-sense understandings held by much of society (Lancaster et al., 2011). With psychedelics, media framing centred around essentialising these substances in terms of danger (Dahlberg et al., 1968), a perspective that was not based on empirical data and that neglected any potential alternative uses of these drugs. The third function of media in relation to influencing audiences is the indirect shaping of attitudes, a mechanism that can be seen clearly in relation to risk. Because the general public lacks the understanding to analyse the likelihood of a particular risk, it relies substantially on news media to gauge this (Lancaster et al., 2011). As such, media shapes public discourses around illegal drugs, and public discourses (where there is a lack of other information sources, like personal experience) in turn influence individual attitudes (Gelders et al., 2009). In the case of psychedelics, public discourses around risk were shaped not by research, but by sensationalist reporting of anecdotes and blatant misinformation (Dyck, 2006).

The practice of psychiatry is not immune to prevailing social discourse in other areas. For instance, attitudes towards the legal use of benzodiazepines for the treatment of anxiety since the 1960s have followed a similar pattern to that of attitudes towards psychedelics. The 1980s and 1990s saw a decline in use due to fears of potential abuse of the drug, despite it showing sufficient efficacy to mediate low risk of potential abuse, and then in 1999 it was returned to its former status as the recommended treatment of choice for anxiety by an international panel (Rosenbaum, 2005). Finally, Lancaster et al. (2011) describe media influencing policy-making and political debate. It is argued that the stronger the emphasis on a topic in the media, the more likely policymakers will pay attention to an issue, and thereby shape policies (Christie, 1998). This too can be seen with psychedelics. Some analysts posit that psilocybin in the US, for instance, was prohibited in the late 1960s as a direct result of researcher Timothy Leary's widely reported media scandal involving use of undergraduates as research participants in psilocybin experiments (Dyck, 2006).

In relation to South African media, however, few mentions of psychedelics by any name were found in news archives from around the same time (1950s to 1990s), with isolated segments of poetry describing LSD (SASO, 1976; Gwala, 2016). Other drug-related reporting archive searches led to results focusing on arrests and deaths, but these generally did not specify the types of drugs, and no specific mentions of psychedelics were found. In South Africa, it seems that psychedelics, though certainly within popular imagination around that time, did not garner the same frenzied media attention that the US saw. Indeed, prohibition of psychedelics was only officially legislated in the 1992 Drugs and Drugs Trafficking Act, with prohibition being "generally accepted" before this (Fellingham et al., 2012, p. 79).

Since the early 2000s, some areas around the world have begun processes to relax laws on psychedelics (Ruane, 2015; Stenstadvold, 2019; Webster, 2019). Media outlets too seem largely to have abandoned tired tropes of moral panic, shifting from demonization to adulation, with the novel angle of 'psychedelics as medicine' proving particularly newsworthy. A cursory online search of both international and South African news yields torrents of articles heralding a new age of psychedelics³. Respected local news outlets like Mail & Guardian and The Sunday Times recently articulated this shift, with headlines reading

³ For an extensive list of articles referring to PAT using LSD, see <https://beckleyfoundation.org/lsd-in-the-media>

“Let’s Change SA’s Mind on Psychedelics”, and *“Psychedelic drugs have ‘mind-blowing’ potential to treat depression”* (Keeton, 2018; Keichel, 2019). Indeed, news media seems, in a matter of around a decade, to have in part reversed its framing of psychedelics.

Attitudes to Psychedelic-assisted Therapy (PAT)

With a promising research climate, but at the same time reductionist (albeit optimistic) media narratives and prohibitionist policies, it is unclear how mental health professionals currently view the situation. Available research on the subject globally is almost non-existent, with a single published study found that investigated the attitudes of psychiatrists towards psychedelics and PAT in the US (Barnett et al., 2018). This study, conducted among psychiatrists in the US, examined associations between attitudes to psychedelics (in a therapeutic context) and participant demographics, knowledge and occupation variables. They found that male gender, lower level of training in psychiatry, and younger age were all associated with more favourable and optimistic attitudes towards psychedelics and psychedelic therapy. These results are intriguing; however, the study is methodologically limited by potential sampling bias, and also in that it did not use parametric measures to analyse data, and did not control for the influence of any potential confounds.

Following the renaissance in psychedelic research, the changing tide of news media framing as well as more psychedelic-friendly government policies are likely to result in a shift in societal attitudes towards these substances. Should South African government regulations be relaxed, mental health professionals, particularly psychiatrists and clinical and counselling psychologists, as the potential gatekeepers of psychedelic medicine, may be required to take a stance. And because no local research exists on attitudes towards psychedelics or on PAT as a whole, despite a proliferation of underground psychedelic ‘treatment centres’ that show a market for this mode of therapy (Ellse, n.d.; Joubert, 2019), research that determines the attitudes of MHCPs towards psychedelics as therapeutic tools is needed as the next step in investigating the prospect of PAT in a South African context.

1.3 Research Questions

Quantitative Questions

1. How positive or negative are participants’ attitudes towards psychedelic substances and PAT, overall and in different domains (legality, safety, treatment potential)?

2. How do participants' sociodemographic characteristics, beliefs, knowledge of psychedelics and PAT, and personal substance use relate to their overall attitudes towards psychedelic substances and PAT?

2.1 Do participants' surveyed sociodemographic characteristics, including age, gender, race, language and occupation type, predict attitudes towards psychedelics and PAT?

2.2 Do participants' surveyed religious and political beliefs predict attitudes towards psychedelics and PAT?

2.3 Does participants' knowledge of psychedelics or PAT, including from formal training, professional experience, which psychedelics they have heard of, whether they have heard of PAT and of safe psychedelic use, whether they have had exposure to negative experiences related to substances, and how up to date with scientific developments they report being, predict attitudes to psychedelics or PAT?

2.4 Does participants' frequency and variety of substance use predict attitudes towards psychedelics and PAT?

Drawing from these research questions, hypotheses include:

H⁰ There is no association between participants' surveyed sociodemographic variables and attitude scores.

H¹ There is an association between participants' surveyed sociodemographic variables and attitude scores.

H⁰ There is no association between participants' surveyed religious and political beliefs and attitudes towards psychedelics and PAT.

H¹ There is an association between participants' surveyed religious and political beliefs and attitudes towards psychedelics and PAT.

H⁰ There is no association between participants' surveyed knowledge of psychedelics or PAT and attitudes towards psychedelics and PAT.

H¹ There is an association between participants' surveyed knowledge of psychedelics or PAT and attitudes towards psychedelics and PAT.

H⁰ There is no association between participants' surveyed substance use and attitudes towards psychedelics and PAT.

H¹ There is an association between participants' surveyed substance use and attitudes towards psychedelics and PAT.

3. How do participant characteristics, including sociodemographic factors, beliefs, knowledge of psychedelics and PAT, and personal substance use relate to their attitudes towards psychedelic substances and PAT at the level of individual attitude items?

Drawing from this research question, hypotheses include:

H⁰ There is no association between participants' surveyed sociodemographic characteristics, beliefs, knowledge and personal experience, and specific attitudes towards psychedelics and PAT.

H¹ There is an association between participants' surveyed sociodemographic characteristics, beliefs, knowledge and personal experience, and specific attitudes towards psychedelics and PAT.

Qualitative Question

1. How, and through which societal discourses, are meanings of PAT and psychedelic substances constructed among participants?

Chapter 2: Methods

2.1 Design

The present study made use of a mixed-methods design, incorporating qualitative and quantitative elements in a single questionnaire. The quantitative component was conducted within the framework of a non-experimental design that is cross-sectional and correlational, using descriptive and inferential statistical methods to analyse data. The qualitative component used thematic analysis, alongside principles of Foucauldian discourse analysis to analyse responses to open-ended questions from a social constructionist perspective.

Mixed Methods Design

Bryman (2006) proposes a number of motivations for the use of mixed methods (MM) designs in research, many of which are relevant in answering the research questions for this study. First, MM designs allow triangulation of findings such that each phase – quantitative and qualitative – can be used to validate the other. Moreover, the notion that in MM research the whole is greater than the sum of its parts is pertinent. Combining two approaches that are different both in methodological analysis and in philosophical orientation often results in a richer, more comprehensive investigation of the topic at hand than could have been obtained via either method alone. Furthermore, employing qualitative methods over and above quantitative analysis not only creates space for depth of interpretation, but also allows opportunities for contradiction and reframing of quantitative findings (Greene et al. 1989).

This study employed a convergent parallel mixed methods design. This type of design involves collecting quantitative and qualitative data simultaneously, analysing these data separately, and finally combining insights from both data types to form a holistic interpretation of the data (Creswell & Plano Clark, 2007). This design ideally allows the traditional advantages of quantitative designs to be combined with those of qualitative designs, yielding data from a large sample that has some potential for generalisability, while at the same time providing in-depth insights from rich descriptions in the data (Creswell & Plano Clark, 2007). For this study, the qualitative data served primarily as a validation and elaboration tool, being used to corroborate or contradict quantitative results, through responses to open-ended questions. This method allows the preservation of the strength generated by using a larger sample size, while qualitative sections put “meat on the bones” (Bryman, 2006, p. 106) of the quantitative data. Some qualitative questions were also

quantified where appropriate (as an example: an ‘Other’ option is selected for ‘First Language’; the participant is asked to specify their what their first language is. They provide an answer, and this is later categorised into an existing category or a new category is formed, in preparation for quantitative analysis).

This design was considered appropriate for the larger research question in a number of ways. Since the rationale for this study centres around the lack of insight into how MHCPs in South Africa generally perceive psychedelics and PAT, the large sample size possible with a MM questionnaire such as this allows for the findings to have a wider scope that could allow some cautious generalisability to the South African psychiatrist and clinical and counselling psychologist population. However, quantitative results are often insufficient in capturing the complexity surrounding a given subject, particularly where, as in this case, that subject is contentious and participants’ perceptions may be heavily influenced by dominant societal discourses (Braun & Clarke, 2006; Bryman, 2006). As such, supplementary qualitative inquiry is needed to confirm, oppose or contextualise these data, to provide a fuller picture of the versions of reality psychiatrists and psychologists construct for themselves around psychedelics and PAT.

The convergent parallel MM design also allows for traditionally contrasting philosophical orientations to be used in combination, which itself allows for a more complex view of the subject to emerge. As Creswell and Plano Clark (2007) suggest for this type of design, two philosophical frameworks were used for this study, a postpositivist framework for quantitative data, and a social constructionist framework for qualitative data, as discussed below.

Despite the suitability of a MM design for this study, some limitations need to be considered. MM designs have been criticised on the grounds that although these allow for both breadth and depth of inquiry, the combination results in there being less scope for both breadth and depth individually (Creswell & Plano Clark, 2007). Moreover, the nature of combining two sometimes disparate approaches can result in complexities in all stages of the research process – in selecting and amalgamating philosophical approaches, in consolidating data for analysis, and in interpreting results (Creswell & Plano Clark, 2007).

Given the suitability of MM design for the present research questions, however, this design was pursued, while remaining cognisant of these potential limitations throughout the research process.

Quantitative Design

Since this study involved no random assignment or control group, and did not directly manipulate variables at hand, it is classified as a non-experimental design (Trochim & Donnelly, 2001). The study design is also correlational, meaning that it is concerned with identifying patterns where variables covary, and will be cross-sectional, meaning the data reflects a single observation at a single point in time (Trochim & Donnelly, 2001). This design enables determining the significance of the relationship between variables, and allows us to measure the strength of some variables' ability to predict change in other variables. Because this study is correlational in nature, it does not seek to establish firm causal claims, since these can only be made when three criteria are fulfilled (Trochim & Donnelly, 2001). The first is temporal precedence, where cause logically precedes effect in time. The most powerful method of establishing temporal precedence is through direct manipulation of the independent variable. However, in some cases theoretical reasons for assuming variable X precedes variable Y are acceptable to establish some degree of temporal precedence (Trochim & Donnelly, 2001). In this case, some variables such as sociodemographic variables (age, gender, race) logically precede criterion variables such as attitude towards PAT. As such, though this is a correlational study, some degree of causality in this area can be established in regression analyses, using sociodemographic variables to predict criterion variables. Other criteria for causality were not met in this study (covariation, established using control groups, and non-spuriousness, established by eliminating alternative explanations for effects, often using random assignment) (Trochim & Donnelly, 2001).

The quantitative dataset was approached from a postpositivist framework. Taking this position in constructing and conducting the study and analysing data means that a single objective reality is assumed to exist, but researchers may not be able to fully access it, due to issues of inherent subjectivity and error in measurement, personal biases and various flaws in design (Creswell, 2012). As such, researcher bias should be minimised as much as possible and not expressed during the study. Since the objective reality cannot be accessed, instead researchers should try to approximate it through the use of statistics, while following the scientific method (Creswell, 2012). In keeping with this approach, development of items for the quantitative section of the questionnaire involved careful scrutinization to detect bias in the choice of questions, their phrasing, and any other possible sources of bias.

Qualitative Design

Social Constructionism. The paradigm within which the qualitative analytic component of the proposed study was conducted is social constructionism. This approach contends that knowledge about the world is created, meaning it is brought into existence by people themselves through social processes, as opposed to existing independently (Willig, 2013). Social constructionism rejects positivist assumptions of a single objective, directly observable reality, instead theorising multiple forms of reality constructed through lived experience and interaction (Creswell, 2012). It considers language as crucial in the construction of these knowledges, and the research process is seen as a co-construction of knowledge between participants and researchers (Creswell, 2012). This was considered to be a suitable framework from which to approach the qualitative aspect of the proposed study, as it is interested in the specific individual forms of knowledge that are created among MHCPs in relation to psychedelics and PAT, how these knowledges are constructed, and what shapes this process of construction.

Thematic Discourse Analysis. The approach used for this study most closely resembles a ‘thematic discourse analysis’ (Singer & Hunter, 1999; Taylor & Ussher, 2001). Discourse analysis falls broadly in the camp of social constructionism as it is concerned with how ‘talk’ (of any form, including text, verbal conversation, and non-verbal communication, among others) is used to construct realities, through discourse. Discourses here refer to specific systems of meaning that construct “particular versions of the world, by providing a framework by which we can understand objects and practices, as well as understand who we are and what we should do in relation to those systems” (Terre-Blanche et al., 2006, p 282). Thematic discourse analysis integrates the process of thematic analysis⁴ with some principles of Foucauldian discourse analysis. FDA focuses, in contrast to interpretive analyses, on how language is used to create particular ways of being in the world, and how these processes structure social life (Forrester & Sullivan, 2018). FDA considers behaviour to be arranged “within an unwritten, mutually accepted framework which not only guides actions, but also produces the concept of socially acceptable and unacceptable actions, knowledge and ways of thinking” (McCabe & Holmes, 2009, p. 1522). It is concerned with questions of how people come to understand themselves by constructing specific versions of reality through discourses, and how these understandings dictate the ways people are able to think and

⁴ See 2.6 for more detail

behave. This is examined with emphasis on power, and the structures and institutions that shape experience, as well as the sociohistorical context in which all this occurs (Willig, 2013). For this study, particular emphasis was placed on examining discourse in relation to power structures and institutional control.

Using a thematic discourse analysis allows for broader social trends to be identified beyond the data itself, aligned as it is with the idea that “While individual texts provide us with traces of social knowledge, the social. . . knowledge itself lies beyond individual texts. Therefore, we need to surpass individual texts in order access the actual matter of discourse analysis” (Spitzmüller & Warnke, 2011, p. 82). The fields of clinical psychology and psychiatry as institutional forces have considerable power over society, dictating appropriate treatment and care of the sick. As such, the MHCPs entrusted with this power, as experts, may navigate their specific subject positions in interesting ways in relation to a topic as contentious as psychedelic medicine. Using concepts from relating to power and institutional control in the context of a thematic process of data analysis enables the construction of a multi-layered representation of the discourses and counter-discourses at play.

Trustworthiness, Credibility, and Reflexivity. The process for ensuring the trustworthiness and credibility for this study included reflexivity. This involved acknowledgement and active awareness of my own position, my own beliefs and assumptions around the topic, and how the instrument I designed and methods I used shaped what I was able to find - and construct - from the data. I drew largely on Macbeth (2001) and Parker’s (1994) conceptualizations of reflexivity to inform this process.

With regard to interpreting the data, it must be acknowledged that my reading of the data is fundamentally my own, as a researcher and as an individual. Consequently, my interpretation of the data I have gathered, despite my attempts to challenge, become aware of and counteract the bias that I was able to anticipate, is by no means constitutive of an impartial or objective account. The qualitative aspect of this study is grounded in a social constructionist ontological and epistemological orientation. As such, knowledge claims are taken as subjective and varied; both those of the participants and of the researcher (Willig, 2013). The interpretation of this data, then, despite being rooted in theory and in guidelines for best practice, is not intended to represent a singular, absolute truth. In line with the positional reflexivity theorised by Macbeth (2001), the research process has involved a

mutual construction, whereby I have built what I came to interpret in this dataset as much as the data contained these features.

I approach this aspect of the research process with an acknowledgement that there is no way to eliminate bias as a researcher, but instead, where possible, try to minimise its influence and make known those parts of it that can be realised (Willig, 2013). An important part of this, and a part that allows for credibility of interpretations to be evaluated, is explicit stating of one's own beliefs. I found this to be especially important in this study, given that it was concerned with attitudes, a realm that is, perhaps more so than some other forms of knowledge, immediately laden with emotion and sensitivity.

My engagement with research related to psychedelics over many years has fostered a more general fascination with the relationship between society and psychoactive substances - and in particular, the fraught relationships between these substances, mental health and illness, and systems of policing and oppression. I believe that there is great injustice in the way societies around the world respond to people who choose to use (the wrong) substances, and that the spectre of drug use is used to maintain an unjust, oppressive system, rooted in capitalism and manifested as racial and other forms of discrimination. The prohibitionist narrative that predominates conceptualisations of drug use and drug users is not, for the most part, based on the inherent properties of these substances, and is neither happenstance nor conspiratorially planned. It is the culmination of a long history of institutional control, of power and resistance, that has been moulded and remoulded by a multitude of competing forces over time. I believe we are in an opportune moment to reshape the narrative about psychoactive substances; the drug policy reforms sweeping across the globe are testament to that. I see South Africa, and much of the world, as being on something of a proverbial precipice, where we decide whether or not to engage with empirical evidence, with the experiences of drug users across the globe, and with the many researchers and therapists who are contributing nuance to the story of drugs and drug users.

It is this framing with which I approached the study. I also came into the research process acutely aware of these beliefs, and I worried about how these would impact what I allowed to develop, or what I constructed, from the data. I attempted to remain cognizant of this potential impact. However, upon reflection, I wondered if in my initial development of the questionnaire I overcorrected for these beliefs, such that when I asked another researcher to review the items I had developed, their concern was that the phrasing had an

overly pessimistic tone, that the questionnaire came across as biased *against* psychedelics and PAT. I reflected on this and revised the items and my handling of them. Subsequently, I was surprised to find that one participant (who was not, overall, explicitly pro-psychedelics or PAT in their responses) had interpreted the questionnaire as having an anti-psychedelic slant. By the end of the study, a few other participants had also expressed some version of this view. This overcompensation was a crucial point of reflection, where I then went through a process of re-examining my beliefs and how they related to the items I chose to include and the overall tone of the questionnaire. This became a process of continual balancing and counter-balancing throughout the course of the study.

My positionality, as a social science researcher and as a white, middle-class, English-speaking woman, undoubtedly played a role in shaping this study. However, it is rarely possible to isolate the effects of different aspects of social identity on the process of social science research; in the present study, I remained cognizant of these aspects of identity and their potential to impact the research.

2.2 Sampling

Recruitment

The sample for this study was drawn from the population of psychiatrists and psychologists (clinical and counselling) in South Africa. Registration as a psychiatrist or as a clinical or counselling psychologist was chosen as a criterion for inclusion on the basis that such providers would be most likely to integrate PAT into their practice or in other ways be exposed to PAT in professional practice, should this mode of therapy become an accepted tool in the treatment of mental illnesses (Haridy, 2020).

As the focus of the study was specifically on the population of clinical and counselling psychologists and psychiatrists in South Africa, non-probabilistic, purposive sampling was used to access potential participants (Trochim & Donnelly, 2001). No specific exclusion criteria were anticipated to be necessary. As participants identified themselves as registered psychiatrists and clinical or counselling psychologists, none were anticipated to be under the age of 18.

Potential participants were recruited via a range of methods. An advertisement (Appendix A) for the study was placed in the August 2020 issue of South African Psychiatry,

and in a newsletter distributed to the Psychological Society of South Africa (PSYSSA). A list of email addresses of psychologists and psychiatrists located across the country was manually compiled from various freely accessible online databases (such as Medpages and TherapyRoute). An email invitation (Appendix A) was distributed to this list. Finally, the invitation also requested that potential participants distribute the invite to MHCPs in their professional networks. The survey was open for approximately two months, during which a follow up email was sent to potential participants. Response rates for external email surveys are estimated at around 10 to 15% (Pandya, 2019) and raise concerns regarding nonresponse bias, time delays in research projects and underpowered studies (Pit et al., 2014). While higher response rates are desirable given concerns around nonresponse bias, recent studies have found little relationship between survey nonresponse bias and response rates, stating that the pursuit of increased response rates “lengthens the fielding period, which can create other measurement problems” (Hendra & Hill, 2019, p. 307).

Sample Characteristics

During the data cleaning process, 18 respondents were identified to have answered only the first couple or few items of the survey. These cases were not considered comprehensive enough to retain in the analysis and were removed. The resulting sample (see table 1 in Methods for full sample characteristics) ($N = 137$) was comprised primarily of psychologists, including intern and community service psychologists ($N = 114$, 83.2%), while psychiatrists (as well as medical officers specialising in psychiatry) made up the remaining 16.8% ($N = 23$). The demographic makeup of participants, though not reflective of South Africa as a whole, closely resembled the makeup of the psychologist population of the country, as reported in data from the Health Professions Council of South Africa (HPCSA) (2017); similarly to the 2017 survey of over 2000 psychologists, the vast majority of participants in the current sample were white, female, and English-speaking, and the most common age range was 31 to 40.

Table 1

Demographics

		N	Valid Percent
Gender	Female	105	76.6
	Male	32	23.4

	Total	137	
Race	Black	10	7.4
	White	109	80.1
	Coloured	7	5.1
	Indian	7	5.1
	Asian	3	2.2
	Total	136	
Age	21-30	14	10.2
	31-40	46	33.6
	41-50	35	25.5
	51-60	25	18.2
	60+	17	12.4
	Total	137	
First Language	English	105	76.6
	Afrikaans	22	16.1
	isiZulu	3	2.2
	isiXhosa	2	1.5
	Setswana	1	.7
	Sesotho	1	.7
	Xitsonga	1	.7
	Other	2	1.5
	Total	137	
Religion	Islam	3	2.2
	Christianity	56	40.9
	Judaism	8	5.8
	Hinduism	2	1.5
	Buddhism	4	2.9
	None	55	40.1
	Other	9	6.6
	Total	137	

Table 2

<i>Occupation</i>			
		N	Valid Percent
Occupation	Psychologist	106	77.4
	Psychiatrist	17	12.4
	Intern Psychologist	4	2.9
	Community Service Psychologist	4	2.9
	Medical Officer (Psychiatry)	6	4.4
	Total	137	
Training Area: Psychology	Clinical	79	73.8
	Counselling	26	24.3
	Other	2	1.9
	Total	137	
Training Area: Psychiatry	Gen. Adult	19	86.4
	Neuropsychiatry	3	13.6
	Total	22	
Work Setting	Private Practice	81	64.8
	Public Health Services	25	20.0
	University	13	10.4
	Other	6	4.8
	Total	125	

2.3 Procedure

The instrument for this study consisted of a single questionnaire (Appendix C) containing both closed-ended quantitative and open-ended qualitative questions. Ethics clearance was obtained from the University of the Witwatersrand Human Research Committee (Non-Medical), protocol number H20/06/07 (Appendix D). After obtaining ethics clearance, potential participants were invited to take part in the study via an email invitation

explaining the nature of the study and what would be required of their participation. This email included a link that directed participants to the participant information sheet (Appendix A), which contained additional information regarding participation, and explained that completing the survey would be taken to signify informed consent to participate. Potential participants were then invited to click a link that directed to the questionnaire, hosted on Survey Monkey. The final page of the questionnaire served as a debriefing letter, thanking participants and providing them with contact details should they wish to receive a summary of the study findings.

The questionnaire was administered remotely, online. This was chosen as an appropriate data collection method as online surveying is an efficient process through which to gather the necessary data, and was thought to be likely to yield a large sample size (Trochim & Donnelly, 2001). Moreover, it was expected that, being registered MHCPs, participants will have at least some computer access, internet access and the computer literacy necessary to complete the questionnaire. The questionnaire was administered in English, as registered psychiatrists and psychologists were expected to be proficient in English, and single language administration avoids translation issues which can confound results (Trochim & Donnelly, 2001). On average, participants required 15 to 25 minutes to complete the entire questionnaire. They were not requested to provide any specifically personally identifying information, and all data was stored as a password-protected spreadsheet on a password-protected computer only accessible to the researcher, preserving confidentiality throughout the process.

2.4 Instrument

Due to the paucity of research on the topic of attitudes toward PAT, no established, validated scales exist for use in studies of this kind. Though various general drug attitude scales are available, they do not relate specifically to psychedelics, are not aimed at a sample of experts, and do not cover content areas relevant here (for instance, PAT). Of the available literature, one questionnaire was sourced that (quantitatively) evaluated psychiatrist attitudes towards psychedelic therapy in a brief article that did not provide reliability and validity indicators (Barnett et al., 2018). Another survey, a component of the Global Drug Survey, contains basic descriptions of results but no information on psychometric properties of its items, and is not peer-reviewed or published in a journal (Winstock et al., 2019). As such, a questionnaire was developed for this study (see Appendix C). Multiple sources were drawn

on to construct the quantitative items in the questionnaire. Theoretical knowledge surrounding PAT was drawn on, filtered through the lens of the research questions, as well as concepts from the two aforementioned questionnaires, and general guidelines on item and scale development.

General guidelines for item construction and analysis were followed, adapted from Rust and Golombok (2014). These included:

- Stating items as simply as possible, thereby reducing potential ambiguity in item interpretation.
- Reverse scoring some items, to reduce acquiescence bias.
- Phrasing items as neutrally as possible, especially when items are sensitive, to attempt to reduce social desirability bias.
- Once data is collected, calculating indicators of reliability and validity, such as Cronbach's Alpha and Exploratory Factor Analysis.

The questionnaire (see Appendix C) surveyed participants demographics relevant to the research topic. These factors were deemed necessary for inclusion in the study both as control variables (to eliminate their influence in statistical analysis of other predictor variables) and to determine whether any of these factors are themselves significant predictors in statistical analysis (Durrheim & Tredoux, 2013). These are factors such as age, gender, race, and religious affiliation and religiosity. This content was surveyed primarily via closed-ended, multiple choice items.

Social and Economic Conservatism Scale

This section also included the Social and Economic Conservatism Scale (SECS), a short scale that measures general degree of conservatism, with participants selecting degree of support for specific concepts (for instance, 'patriotism', 'welfare benefits') on a 0-100 scale. The items on this scale are thought to cluster into two components: social conservatism, relating to the "preservation of ancient moral traditions of humanity" (Kirk, 1953, as cited in Everett, 2013, p.8), and economic conservatism, concerned with "the involvement of the government and the regulation of private enterprise in the economic lives of its citizens" (Everett, 2013, p. 1). The SECS, though its use has not before been published in South Africa, has been found to be valid and reliable in other parts of the world (Everett, 2013). In an attempt to ensure its relevance for a South African sample, one item surveying

views on ‘traditional marriage’ was rephrased to ‘homosexual marriage’, to reduce possible ambiguity (see Appendix C). Another item, surveying views on ‘traditional values’, was removed for the same reason.

Occupation and Knowledge

The questionnaire also included a section determining more information around the participants’ involvement in psychiatry or psychology, and various forms of knowledge around psychedelics and PAT. This included items assessing whether participants had professional experience with patients who reported psychedelic use (dichotomous and open-ended response to provide more information); how much formal training participants had received about psychedelics; which of eight popular psychedelics/PLSs participants had heard of; the majority knowledge source for these substances (multiple choice); whether participants felt they were up to date with scientific developments in their field. Since research among US psychiatrists indicates that trainees may be more likely than registered psychiatrists to believe psychedelics deserve further research, could improve treatment outcomes, and do not increase risk for future psychiatric illnesses (Barnett et al., 2018), it is reasonable to assume that these and other career variables could be important factors in predicting attitudes towards PAT. With regard to items assessing knowledge and personal experience around psychedelics specifically, it seems plausible that knowledge and experience concerning a subject has bearing on attitudes towards that topic, and so such variables could be important as predictors of attitudes. This section comprised multiple-choice items, and items requiring selection of a numeric response.

Substance Use

Participants’ level of psychoactive substance use was also assessed. This included lifetime use of 18 of the most commonly used substances, including legal and illegal drugs. For each substance, participants were asked to indicate frequency of use, ranging from ‘Never Used’ to ‘Regular Use’. This was selected for inclusion as there may be a relationship between use of psychedelics or other substances and attitudes here. for instance, Barnett et al. (2018) posited that one reason for the association they found between male gender and more optimistic attitudes to psychedelic therapy, was that males generally report higher rates of substance use. As such, the authors theorised that drug use may be responsible for the relationship between gender and attitudes, though they did not assess drug use in the study.

Consequently, it was deemed important, despite the sensitivity of such items, to survey participants' use of various substances.

Attitudes to Psychedelics and PAT

The questionnaire also included a section surveying respondents' knowledge and attitudes around psychedelics and PAT. This section contained items corresponding to content areas of recreational use of psychedelics, psychedelic-assisted therapy, legality and prohibition, safety, and knowledge production (for instance, formal training about psychedelics and sources of knowledge around psychedelics). The manifestations of these content areas were assessed using both open-ended, constructed response items (yielding qualitative data) and multiple choice and Likert-type items (yielding quantitative data). For example, participants were asked to indicate the extent to which they agreed or disagreed with various statements, for instance: Psychedelic substances... "should be legal for personal use", or "may improve treatment outcomes when used during psychotherapy", or "are unsafe for recreational use". Following these items, participants were invited to elaborate on their choice in an open-ended format.

Qualitative items were used throughout to probe for more detail, an explanation of the response given to the quantitative item, or perceptions relating to the content of the item. These qualitative items were open-ended, and encouraged participants to provide their perspectives in detail. Qualitative questions were marked as 'Optional', in order to minimise the possibility of participants withdrawing where potentially sensitive responses are probed, or due to fatigue. Participants were instead offered the option to omit a response and continue to the next item.

2.5 Ethical Considerations

Ethics approval for the study was obtained through the University of the Witwatersrand Human Research Ethics Committee (Non-Medical), protocol number H20/06/07 (Appendix D). The American Psychological Association Ethical Guidelines for Human Research were followed for this study, ensuring that key ethics principles -- beneficence and non-maleficence, justice, respect, integrity and responsibility -- were upheld throughout the research process (American Psychological Association, 2002). These principles were upheld in adhering to the following guidelines:

Informed Consent

At the start of the survey, participants were advised that completing the survey constituted giving their informed consent. They were provided with information about the study description and aims, as well as all parties involved in the research, what would be required of them as participants, and the study procedure. Eligibility information was also provided, along with potential risks, inconveniences and benefits to the participants. Contact details of the researcher were also provided, should participants have any questions or concerns. Participants were assured that confidentiality and anonymity would be preserved throughout the research process, that their participation would be entirely voluntary, and that they would be able to withdraw at any point during their participation.

Deception and Coercion

No deception was used in the study. The aims and description of the study were explicitly stated to participants prior to their participation. They were not offered a financial or other direct incentive to participate, and were thus were not coerced into participating.

Risk, Benefits and Debriefing

This study posed minimal direct benefit to participants, apart from possible self-reflection on their perspectives of psychedelics or PAT, or gaining information about the existence of PAT as a topic of research, should they not have encountered it. The study was categorised as posing low risk to participants. It is possible that some questions (for instance, personal history of drug use, negative experiences with drugs) were potentially sensitive to participants. The debriefing section at the end of the questionnaire (Appendix C) therefore contained resources to assist participants should this occur, including links to databases of psychologists and substance use support services. This section also thanked participants for their participation.

Confidentiality and Anonymity

All responses were kept anonymous, without requesting any identifying information from participants, who were instead identified by a randomly generated number. All data was stored as a password-protected spreadsheet on a password-protected computer only accessible to the researcher, and raw data was only be seen by the researcher and her supervisor. Any reporting of results was either in aggregate or, where excerpts have been used individually (for instance, participant quotes from open-ended questions), these do not contain any

potentially identifying information, preserving the anonymity of the participants. Participants were informed that anonymised data would be stored indefinitely on the researcher and her supervisor's password-protected computer for possible future research use.

2.6 Data Analysis

Quantitative

Variables collected by the questionnaire include sociodemographic factors, as well as occupational and knowledge variables, substance use, and attitude variables.

All statistical analyses were conducted using IBM's Statistical Package for the Social Sciences (SPSS version 27). Descriptive statistics for each content area are reported, as are frequencies for categorical data (see Section 3.1). Internal consistency of the relevant components of the scale was evaluated using Cronbach's alpha (see Section 3.3). Factor analysis was conducted to determine the factor structure of various parts of the questionnaire (see Section 3.3) (Durrheim & Tredoux, 2013).

Much of the quantitative data collected was in the form of Likert-type responses. There is considerable debate as to whether parametric tests are appropriate for this kind of data, with critics emphasising that Likert scale data is ordinal and not interval, and is therefore unsuitable for parametric analysis (Clason & Dormody, 1994; Kuzon et al., 1996). However, supporters contend that given sufficiently large sample sizes and numbers of items, and relatively normal distribution of data, these scales are appropriate for analysis using parametric tests (Bishop & Herron, 2015; Carifio & Perla, 2007; Carifio & Perla, 2008). Since the relevant assumptions were met for such analyses, and given both that parametric tests allow stronger inferences to be drawn from data, and that their use with data from Likert scales is generally accepted in the social sciences (Bishop & Herron, 2015), these tests were used in the present study.

Before conducting analyses, the assumptions for multiple regression analysis were checked. To determine whether any demographic characteristics, personal beliefs, knowledge around psychedelics or drug use predicted attitudes towards psychedelics and PAT, two hierarchical multiple regression analyses were conducted. The first was to determine predictors of general attitudes (including safety, legality, therapeutic benefit for general emotional distress), while the second tested for predictors of disorder-specific attitudes

(including impact on particular mental disorders and severe symptoms thereof, such as suicidality) (see factor structure in Section 3.2 for more detail).

In order to more closely examine attitudes towards psychedelics and PAT, chi-square analyses were conducted to determine whether any participant characteristics were associated with responses to individual attitude items. All assumptions were verified before tests were interpreted.

Qualitative

The present study employed a process resembling Braun and Clarke's (2006) formulation of thematic analysis (TA) as the method of analysis for qualitative data, informed by principles from Foucauldian discourse analysis. The process of thematic analysis is well-suited to research involving perceptions and attitudes, especially where social issues and issues of media representation are involved (Willig, 2013). According to the Braun and Clarke's (2006) formulation, TA as a method is not dependent on any particular qualitative paradigm, and thus can be tailored to suit a chosen orientation, which in this case was social constructionism. The authors define TA as a method that both "organises and describes your data set in (rich) detail" and "interprets various aspects of the research topic" (p. 6). It must be emphasised that TA is not a passive process, revolving around themes "emerging or being discovered" (p. 7), but rather being actively created out of the research interest of the researcher. Within this method, a distinction is made between TA using a top-down, deductive approach (analysis is driven by specific theoretical questions, with a focus on gaining detail about specific small portions of the data), and TA using a bottom-up, inductive approach (wherein themes are not necessarily related to research questions, but are drawn from the data more loosely, giving a holistic picture of the data corpus) (Braun & Clarke, 2006).

In the present study, the function of the qualitative data was to complement specific quantitative questions and provide insight into particular topics (see Qualitative Research Questions). As such, a stronger focus was placed on using deductive methods in analysing the data, using an a priori template to initially structure the analysis (Willig, 2013). However, there was also room for novel insights into the topic to be identified, with new themes drawn from the data being integrated with existing a priori codes, thus combining deductive and inductive methods of analysis. Though themes were identified on both the semantic (explicit, surface-level meanings) and the latent (underlying assumptions and ideologies) level, greater

emphasis was placed on analysis at the level of latent content, seeking to describe the “features that gave [the data] that particular form and meaning” (Braun & Clarke, 2006, p. 13). Analysis at the latent level is compatible with a critical social constructionist approach, which in the context of a thematic process of analysis attempts to identify how “events, realities, meanings and experiences... are the effects of a range of discourses operating within society” (p. 9). In this way, this approach ties in elements of discourse analysis, while also reporting any important themes on a semantic level (Braun & Clarke, 2006). Here, thematic analysis and discourse analysis are integrated by drawing on lenses of institutional power and control in the process of coding and categorising potential themes, similarly to the approaches used by Taylor and Ussher (2001) and Singer and Hunter (1999). Integrating these concepts with the process of thematic analysis involves various steps. First, initial familiarisation with the dataset is followed by identification and labelling of codes. These are then grouped and evaluated for potential patterns, identifying possible discourses at work and their respective functions and effects. These initial themes and discourses are then re-examined and refined, and participant responses that encapsulate a particular theme are extracted from the dataset. Themes and the underlying discourses that structure them are then compared with one another and refined again. In this way, the process of thematic analysis can be informed by pertinent aspects of FDA – an attention to underlying systems of meaning, and the power and institutional forces that govern what can and cannot be said (Taylor & Ussher, 2001).

Chapter 3: Results and Discussion

Results of this study are presented along with the discussion, as is sometimes the case particularly for mixed-methods research, where this can aid in cohesiveness of the study, and in an attempt to reduce repetition as much as possible (Creswell & Plano Clark, 2007). This section begins with a presentation and discussion of descriptive statistics, followed by reporting of factor structure and reliability results. Results of multiple regression and chi-square tests are then presented and discussed. This is followed by a presentation and discussion of the findings of the thematic discourse analysis, and then an integrated discussion that collates findings from all of these sections.

3.1 Descriptive Statistics

Demographics and Occupation Characteristics

During the data cleaning process, 18 respondents were identified to have answered only the first couple or few items of the survey. These cases were not considered comprehensive enough to retain in the analysis and were removed. The resulting sample (see Table 1 in Methods for full sample characteristics) ($N = 137$) was comprised primarily of psychologists, including intern and community service psychologists ($N = 114$, 83.2%), while psychiatrists (as well as medical officers specialising in psychiatry) made up the remaining 16.8% ($N = 23$). As previously mentioned, the demographics of participants reflected the makeup of the psychologist population of the country, rather than the general population of South Africa (HPCSA, 2017); the vast majority of participants in the current sample who gave responses were white (80.1%), female (76.6%), and English-speaking (76.6%), and the most common age range was 31 to 40 (33.6%).

Conservatism (SECS)

Political beliefs were assessed using the Social and Economic Conservatism Scale (SECS), a short instrument that measures general degree of conservatism, with participants indicating their levels of support for specific concepts (such as ‘patriotism or ‘welfare benefits’). The items are thought to cluster into two components: social conservatism and

economic conservatism. An exploratory factor analysis generally supported this factor solution (see Factor Analysis in the following section). Because reliability of the scale as a whole was found to be very high, a total composite score (indicating overall level of conservatism) was used in the main regression analyses (see Section 3.4). This score was generated by summing scores for the 10 SECS items and dividing by 10. For this composite score and for the individual SECS items, higher scores (highest possible score = 100) indicate higher levels of conservatism (lowest possible score = 0). For chi square tests of association, individual SECS items were used (see Chi Square Analyses in section ? below).

Of the 137 participants who answered the Social and Economic Conservatism Scale (SECS), the mean score was 47.1 (SD 12.557). Descriptive statistics for each item and the composite score are presented in Table 3 below. On average, participants were more positive towards concepts of Homosexual Marriage*, Welfare Benefits*, and Abortion*, The Family Unit, and Business, and less positive towards Gun Ownership. This seemed to indicate, on average, a fairly socially liberal political position. Indeed, when asked to describe their political affiliations, most participants used terms such as ‘liberal’, ‘centre left’ or ‘neoliberal’, with very few participants describing their political affiliation as right wing, conservative or any other terms usually associated with social or economic conservatism.

Table 3

Social and Economic Conservatism Scale (SECS)

	N	Minimum	Maximum	Mean	Std. Deviation
SECS Composite Score	137	0	100	47.10	12.557
Abortion*	137	0	100	33.18	29.446
Limited Government Authority	137	0	100	61.30	22.325
Military and National Security	137	0	100	45.66	23.756
Religion	137	0	100	52.62	24.493
Welfare Benefits*	137	0	100	26.58	20.746
Gun Ownership	137	0	99	27.98	27.052
Homosexual Marriage*	137	0	100	16.19	26.728
Business	137	0	100	72.80	20.043
The Family Unit	137	27	100	83.39	18.136

Patriotism	137	0	100	51.31	25.656
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* Items reverse scored (i.e. higher scores indicate more negative attitudes toward these concepts)

Religiosity

Of the 137 participants who responded to the item assessing religious or spiritual affiliation, 40.9% listed their religion as Christianity, with an almost equal proportion identifying no religious or spiritual affiliation (40.1%). All other religions made up the remaining 19% (see Table 4). Although estimates vary, around 81% of South Africa's population is thought to identify as Christian (including Protestant, Catholic and various other denominations, with a large minority of people affiliated with African independent churches), while other religions and atheism constitute the remaining 19% (Office of International Religious Freedom, 2019). As such, atheism is greatly overrepresented in the current sample compared to the general population.

In the current sample, of the 85 participants who reported having a religious or spiritual affiliation and elected to answer questions about their religiosity the mean religiosity score was 11.35 (SD 2.81), where the maximum possible score (15) indicated very high religiosity and the minimum possible score (3) indicated very low religiosity (see Table 5). Items surveyed the degree of influence religion had over decision-making, the magnitude of the role religion played in participants' lives, and their level of self-identification with being a religious or spiritual person. The mean scores reflect that the participants who identified themselves as having a religious or spiritual affiliation scored relatively highly on religiosity, and scored similarly across the three different dimensions of religiosity.

Table 4

Religious or Spiritual Affiliation

		Frequency	Valid Percent
Valid	Islam	3	2.2
	Christianity	56	40.9
	Judaism	8	5.8
	Hinduism	2	1.5
	Buddhism	4	2.9
	None	55	40.1
	Other	9	6.6
	Total	137	100.0

Table 5

Religiosity

	N	Minimum	Maximum	Mean	Std. Deviation
Role in everyday life	85	1	5	3.88	1.028
Influence in decision-making	85	1	5	3.81	.970
Self-identification	85	1	5	3.66	1.018
Total religiosity	85	3	15	11.35	2.810

Knowledge of Psychedelics/Psychedelic-like Substances (PLSs) and PAT

The vast majority (86.2%) of respondents had heard of PAT. Among those who had heard of PAT, academic sources (35.4%) and other media sources (31.3%) were the most common information source for this knowledge (Figure 1).

Of 117 participants who provided responses, all had heard of at least one psychedelic. The mean number of psychedelics participants had heard of was 5.71 out of a possible 8 substances surveyed ($SD = 1.722$). When asked about which psychedelics or PLSs they had heard of, the vast majority of respondents indicated awareness of psilocybin and LSD, and all respondents had heard of MDMA (Table 6). Almost two thirds of respondents had heard of

DMT and mescaline. Despite the proliferation of treatment centres dedicated to its use in South Africa (Ho, 2019; Hannaford, 2017), ibogaine was unknown to almost two thirds of respondents. The same was found for salvia, with around two thirds of respondents being unaware of the substance. Finally, the vast majority of respondents had heard of ketamine. Unfortunately, due to the lack of published research available, it is unclear how awareness of these substances in this sample compares to populations of mental health professionals or the general population, either in South Africa or globally.

Respondents were also asked about the source of the majority of their knowledge about each psychedelic or PLS they had heard of (Figure 1). For psilocybin, the most common source was friends or family (28.3%), followed by academic sources (25.7%) and other internet sources (21.2%). LSD was also most commonly learned about through friends or family (25.4%), followed by via entertainment media (23.7%) and then other internet sources (20.2%). Similarly, DMT was most commonly heard of through friends or family (37%), followed by other internet sources (24.7%) and then academic sources (15%). Ibogaine was equally commonly learned about through family or friends and other internet sources (28.9%), followed by academic sources (20%) and then news media (8.9%). Similarly, mescaline was learned about equally through friends or family and other internet sources (23.2%), followed by academic sources (18.8%) and then entertainment media (17.4%). Contrary to expectations, given the media representation of the substance (Hughes et al., 2010; UK Drug Policy Commission, 2010), news media accounted for the least common information source for MDMA (.9%). For MDMA, 41.4% of respondents received most information from friends or family, followed by academic sources (18.1%) and then entertainment media (15.5%). Salvia was equally commonly learned about through friends or family and other internet sources (27.5%), followed by entertainment media (20%) and then academic sources (12.5%). Finally, ketamine was most commonly learnt about through academic sources (34%), likely owing to its use in hospital settings in anaesthesiology and pain management. This was followed by professional training (20.2%) and then other internet sources (17%).

Whether participants perceived themselves to be up to date with scientific developments in their field (psychology or psychiatry) was measured on a 1-4 scale (1 - Not up to date, 2 - A little up to date, 3 - Somewhat up to date, 4 - Very up to date). The mean response was Somewhat up to Date (Table 7).

It is noteworthy that despite the vast majority of respondents having had professional experience with patients who reported psychedelic usage (70.4%), almost half (46.7%) had no formal training about psychedelics, and another third had very little formal training. Moreover, professional training constituted among the lowest proportion of information sources for all PLSs, with the exception of ketamine. Indeed, for all other substances, friends or family was the main information source (or on par with one other source) for most respondents. Additionally, neither academic sources nor professional training constituted a majority information source for any PLS, with the exception of ketamine (perhaps owing to its conventional use in other medical settings). However, the second most common majority information source for psilocybin (after friends or family) was academic sources, perhaps explained in part by the recent surge in publications of research on psilocybin as an adjunct to psychotherapy in the last decade (Beckley Foundation, 2017).

Participants were asked whether they had ever been exposed to a negative experience with any psychoactive substances (for instance, overdose, addiction), either directly (themselves) or indirectly (family or friend). Just over half (51.3%) of respondents reported no exposure to this. When asked whether they had heard of healthy individuals using psychedelics safely, three quarters of respondents (75.2%) responded that they had.

Overall, these results indicate an intriguing combination of high levels of exposure to psychedelics (through professional experience among patients, through basic awareness of particular psychedelics, and through hearing of safe use in general) and low levels of technical knowledge about these substances (based on lack of formal training, and that academic sources or professional training were uncommon as majority information sources). The implications of MHCPs' low knowledge levels for how they respond to patients' use of psychedelics in their practice are unclear. This could be an important avenue of inquiry because of the substantial, varied impact that psychedelics can have on the mental health of those who consume them.

Figure 1

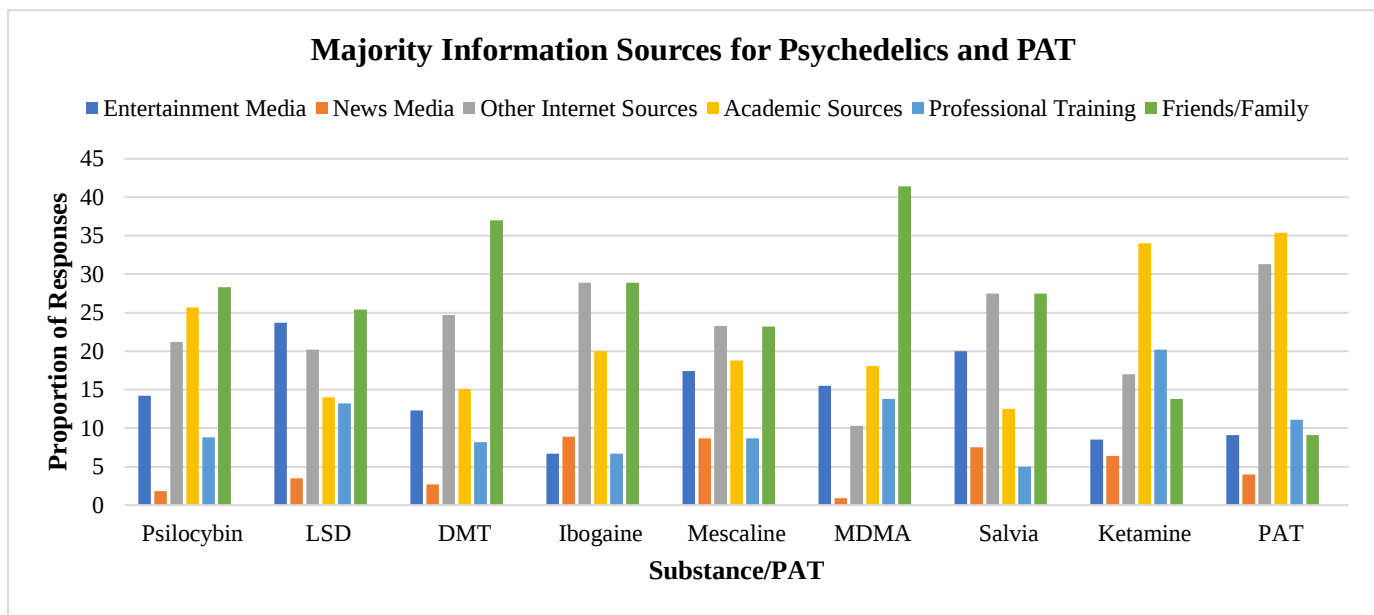


Table 6

Awareness of PLSs and PAT

		Psilocybin	LSD	DMT	Ibogaine	Mescaline	MDMA	Salvia	Ketamine	PAT
Valid	No	1.7	.9	37.9	62.3	39.7	.0	65.8	14.0	13.8
	Percent									
	Yes	98.3	99.1	62.1	37.7	60.3	100	34.2	86.0	86.2
Valid N	Total	117	116	116	114	116	116	114	114	116

Table 7

Knowledge of PLS and PAT

		N	Valid Percent
Up to Date: Scientific Developments	Not Up To Date	5	4
	A Little Up To Date	17	13.6
	Somewhat Up To Date	73	58.4
	Very Up To Date	30	24
	Total	137	
Professional Experience	No	37	29.6
	Yes	88	70.4
	Total	137	
Heard of Safe Psychedelic Use	No	29	24.8
	Yes	88	75.2
	Total	117	
Formal Training: Psychedelics	None At All	64	46.7
	Very Little	46	33.6
	A Moderate Amount	13	9.5
	A Lot	2	1.5
	Total	137	
Exposure to Negative Experience (any psychoactive substances)	No	60	51.3
	Yes	57	48.7
	Total	117	

Psychoactive Substance Use

Participants were asked to report lifetime use of 18 commonly used legal and illegal drugs, as well as frequency of use, on a scale from 0-3 (Never Used, Limited Use/Experimentation, Moderate Use/Experimentation, Regular Use). 110 participants reported use of at least one substance. Of these, frequency of use for non-PLSs is pictured below (Figure 2). The substance commonly in regular use by respondents was caffeine (63.2%), followed by alcohol (37.4%) and then tobacco (14%). Alcohol was the most

commonly reported substance for lifetime use (98.3%), followed by caffeine (97.4%) and cannabis (73.9%). The most common substance for limited use/experimentation was cannabis, with over half (57.4%) of respondents reporting this frequency of use, followed by tobacco (42.1%). Frequency of use for PLSs is pictured in Figure 3 below (with ibogaine excluded, as no participant reported any use). Almost a third of participants reported having ever used psilocybin (31%) and MDMA (29.4%). Lifetime use (as in any time during their lives) for other PLSs ranged from 5.5% (DMT) to 22.3% (LSD).

Figure 2

Non-PLS Use by Proportion of Sample and Frequency of Use

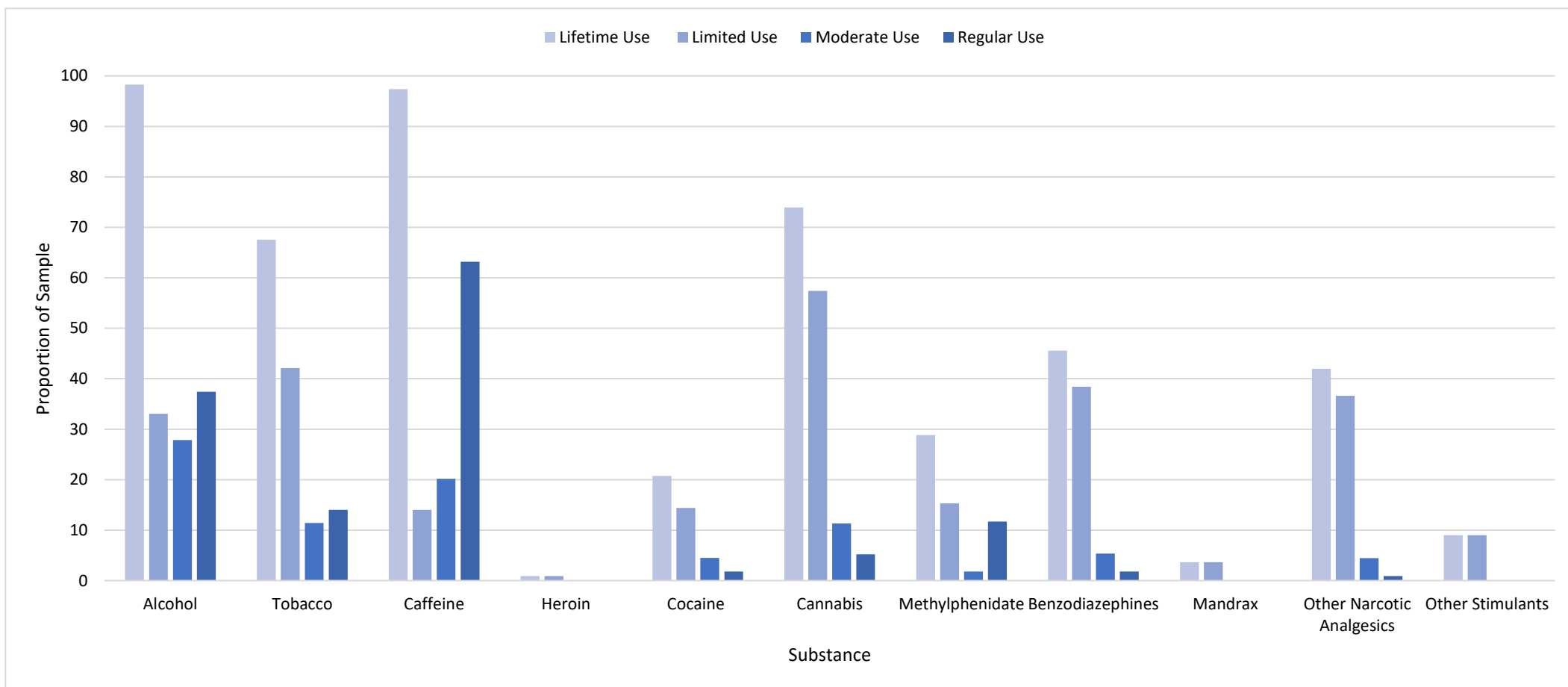
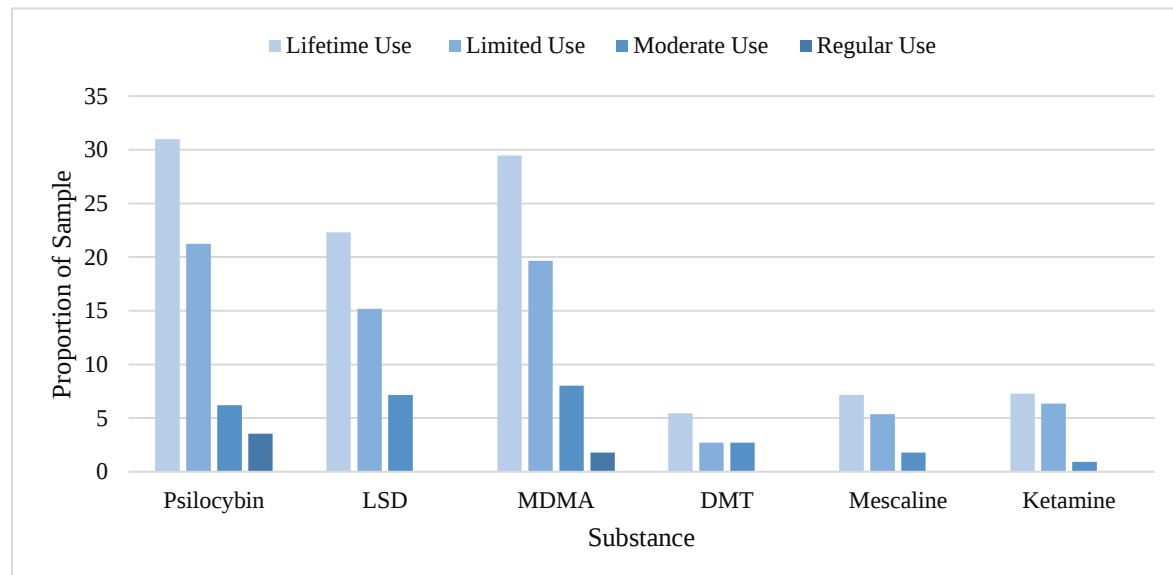


Figure 3

PLS Use by Proportion of Sample and Frequency of Use



Data on drug use in South Africa is limited, with few representative studies estimating prevalence of substance use in the general population. In a nationally representative survey conducted in the 2003-2004 period, lifetime alcohol use (having ever used alcohol at least once) has been estimated at around 39% of the general population, with tobacco lifetime use around 27%, and cannabis at around 9% (Van Heerden, Grimsrud, Seedat, Myer, Williams, & Stein 2009). A population-based survey using 2012 data measured drug use in the past three months among over 26 000 participants around South Africa. This study found a 3-month cannabis prevalence of 4%, ‘amphetamine-type stimulants’ and cocaine prevalence of .3%, opiate prevalence of .3%, and a ‘hallucinogen’ prevalence of .1% (Peltzer & Phaswana-Mafuya, 2018.)

Results for 3-month prevalence of substance use are difficult to compare with the current study, wherein options for frequency of use were not explicitly defined as particular time periods. However, with regard to lifetime use, almost all participants in the current study (98.3%) had used alcohol at least once, around two thirds (67.5%) had used tobacco at least once, and about three quarters (73.9%) had used cannabis at least once. In relation to psychedelics, lifetime prevalence ranged from 5.5% (DMT) to almost a third of participants, 31% (Psilocybin). Overall, then, the current sample reported substantially higher levels of

lifetime drug use than the sample from the 2003-4 population study. There are various possible reasons for this, ranging from sampling bias in the current study (those who have used drugs may have been more likely to complete the survey), to the amount of time that had elapsed between the two studies, which was approaching two decades, to the current sample not being representative of the South African population in various ways, such as all having attended university (associated with higher rates of experimentation with substance use (Pérez-Pazos et al., 2015)).

Based on item clustering (see Section 3.2), for the purpose of multiple regression analyses, substance use was divided into psychedelic/PLS and non-PLS use, comprising 6 PLSs (with ibogaine excluded, since no participants reported any use of this substance) and 11 non-PLSs.

Composite scores of overall frequency of PLS and non-PLS use were created by summing frequency of use scores for all substances in those categories. For PLS use, this resulted in a minimum possible score of 0 (indicating no use of any PLS) and a maximum possible score of 18 (regular use of all PLSs). For non-PLS use, the minimum possible score was 0 (no use of any non-PLSs) and the maximum possible score was 33 (regular use of all non-PLSs).

Attitudes towards Psychedelics and PAT

Attitudes towards PAT and PLSs were assessed via 18 Likert-type items. Items were presented as statements requiring responses on a 1-5 scale (Strongly Agree, Agree, Neutral/I Don't Know, Disagree, Strongly Disagree), with higher scores indicating greater general positivity or openness towards PLSs and PAT. The content areas surveyed included recreational, medical and religious use of psychedelics; safety and effectiveness of PAT for various purposes (as treatments for specific disorders and general ailments); and legality of psychedelics. Based on exploratory factor analysis, attitudes items were delineated into two components: attitudes about general use of PLSs in different contexts and safety and legality items ('general attitudes'), and attitudes relating to substance use in relation to specific disorders or focusing on severe symptoms of disorders ('disorder-specific attitudes') (see Factor Analysis in section ? below). Composite scores were created for each component, by summing scores for all items in the component (Table 8). For general attitudes, this yielded a maximum possible score of 55 and minimum possible score of 11; for disorder-specific attitudes this yielded a maximum possible score of 35 and minimum possible score of 5.

Table 8

PLS Attitudes

	N	Minimum	Maximum	Mean	Std. Deviation
PLS: General Attitudes	104	11	51	35.33	7.752
PLS: Disorders Attitudes	107	7	29	19.57	4.023

Examining attitudes via individual items (Figures 4 and 5 below), it seems that overall, both for general attitudes and disorder-specific attitudes, participants frequently gave Neutral/I Don't Know responses, meaning they often did not have particular attitude or were uncertain about various items. Given the low levels of knowledge about psychedelics and PAT found in the previous section, it is likely that rather than neutrality, these responses more commonly represent an ambivalence or uncertainty about PLSs or PAT. This is perhaps underscored by the apparent consensus that PLS use 'requires more research to determine safety', with over half of respondents (55.6%) strongly agreeing with this statement, and another third (32.4%) agreeing. This is further elaborated by the qualitative explanations for some of these responses, which frequently included respondents expressing that they did not know enough to express an opinion about a particular item with any certainty.

Out of all the items, participants on the whole were the most favourable towards the potential role of psychedelics in understanding the self. When asked whether PLS use 'can allow for creative self-exploration', three quarters of participants (74.1%) agreed or strongly agreed, and only 5.6% disagreed or strongly disagreed.

Contextual Safety & Legality. For to items relating to the safety of PLS use, the context of use seemed to be particularly salient for respondents. Large proportions of respondents expressed concerns about the safety of PLSs when this use was in 'recreational' contexts, with more than a third (36.4%) agreeing or strongly agreeing that PLSs are 'unsafe for recreational use', and conversely, even more participants (44.5%) disagreeing or strongly disagreeing that PLSs 'can be used safely recreationally'. For therapeutic settings, however, there was a lower level of concern in general, with only 8.7% of participants agreeing or strongly agreeing that PLSs 'are unsafe under medical supervision'. Similarly, responding to the statement that PLSs 'can be used safely for religious/spiritual purposes', only 19.4% of

participants disagreed or strongly disagreed, while over a third (38.9%) agreed or strongly agreed.

In relation to legality, participants were divided as to whether PLSs ‘should be legal for personal use’, with an almost equal proportion agreeing or strongly agreeing (37.1%), and disagreeing or strongly disagreeing (37.9%), while the remaining quarter responded neutrally. For whether PLSs ‘should *not* be legal for medical use under supervision’, however, only one participant strongly agreed, and while 32.7% agreed, more than two thirds (66.3) disagreed or strongly disagreed. As such, for both legality and safety, participants’ attitudes seemed to be more favourable to PLS use in contexts of regulation or monitoring within a medical (or religious) institution than in contexts without this form of supervision.

Emotional Distress & Mental Illness. Various items related to the potential uses of PLSs in the treatment of different forms of emotional distress were included in the questionnaire. Almost half of participants (47.2%) agreed or strongly agreed with the general statement that PLS use “may improve treatment outcomes when used during psychotherapy”, and only 10.2% disagreed or strongly disagreed with this. However, a large proportion (42.6%) selected neutral/I don’t know. In relation to general emotional distress, attitudes relating to the potential use of PLSs in treating anxiety and depression were both similarly favourable, with over half of participants agreeing or strongly agreeing that PLSs ‘could be used to treat anxiety’ (52.8%) and ‘depression’ (55.6%), and only 13.9% disagreeing or strongly disagreeing with both statements.

Other items included in the questionnaire related to specific mental illnesses or severe symptoms thereof. Regarding suicidality, a similar proportion of participants agreed or strongly agreed that PLS use increases risk of suicidality (14.8%) or worsens existing suicidality (16.7%); though the majority of participants selected neutral/I don’t know for both statements (62% and 60.2% respectively). This uncertainty contradicts contemporary research on suicidality and mental illness. For instance, using data on over 190 000 respondents on the National Survey of Drug Use and Health in the US, researchers found, when controlling for covariates, that lifetime use of classical psychedelics was significantly *negatively* associated with general psychological distress, suicidal thinking and suicidal planning, and a suicide attempt in the past year (Hendricks et al., 2015). In relation to mood disorders, a slim majority of participants also stated that they were neutral or did not know whether PLS use increases risk of mood disorders (52.8%) or worsens them (51.9), though

almost a third (31.5%) agreed or strongly agreed that use increases risk, and 18.% that use worsens existing mood disorders. Comparing these results relating to suicidality and mood disorders with those relating to general emotional distress ('anxiety' and 'depression'), it seems participants were on the whole more optimistic about PLS use in contexts of general emotional distress, and gave more neutral/I don't know responses to contexts of specific mental illness or severe symptoms. In relation to psychosis, over half (54.7%) of participants agreed/strongly agreed that PLS use 'increases risk of future psychotic disorders', while only 11.2% disagreed/strongly disagreed. Similarly, over half (55.5%) of participants believed that PLS use worsened psychotic disorders, while only 6.5% believed that it did not. Most participants (55.1%) were unsure or did not know whether PLSs 'show promise in treating psychotic disorders', but one third (33.6%) disagreed with this.

Although there have historically been reports of psychotic experiences associated with psychedelic use (Smith, Raswyck, & Dickerson, 2014; Strassman, 1984), and more recent isolated examples (Kuzenko et al., 2011), the methodology utilised in these studies has been critiqued, calling into question claims of causality (see section 3.6). Moreover, reviews of RCTs have not found effect of PSLs on psychosis (Chi & Gold, 2020). However, attitudes towards psychedelics often lack a scientific basis. It is also relevant that the current sample comprises mental health care providers, the vast majority of whom have had professional experience with patients who reported psychedelic use, and for the most part have had little professional training or exposure to academic information about psychedelics. It can be presumed that much of their exposure to psychedelics, then, stems from experience with individuals already suffering from mental illness. Consequently, it is reasonable to assume that their views on psychedelics in relation to mental illness are coloured by this exposure -- despite the fact that most participants have also heard of safe psychedelic use.

Valid proportions of responses to general and disorder-specific attitudes towards psychedelics/PLSs and PAT are detailed in Figure X and X below.

Figure 4

General Attitudes to PLSs and PAT

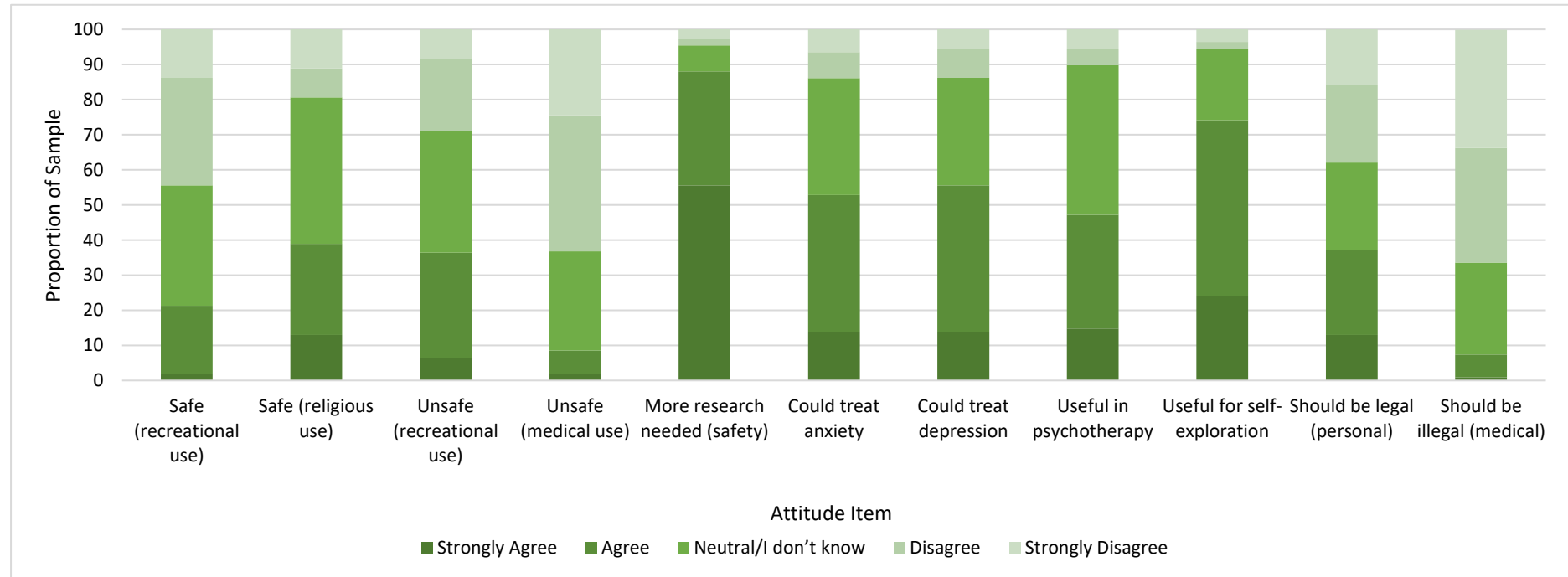
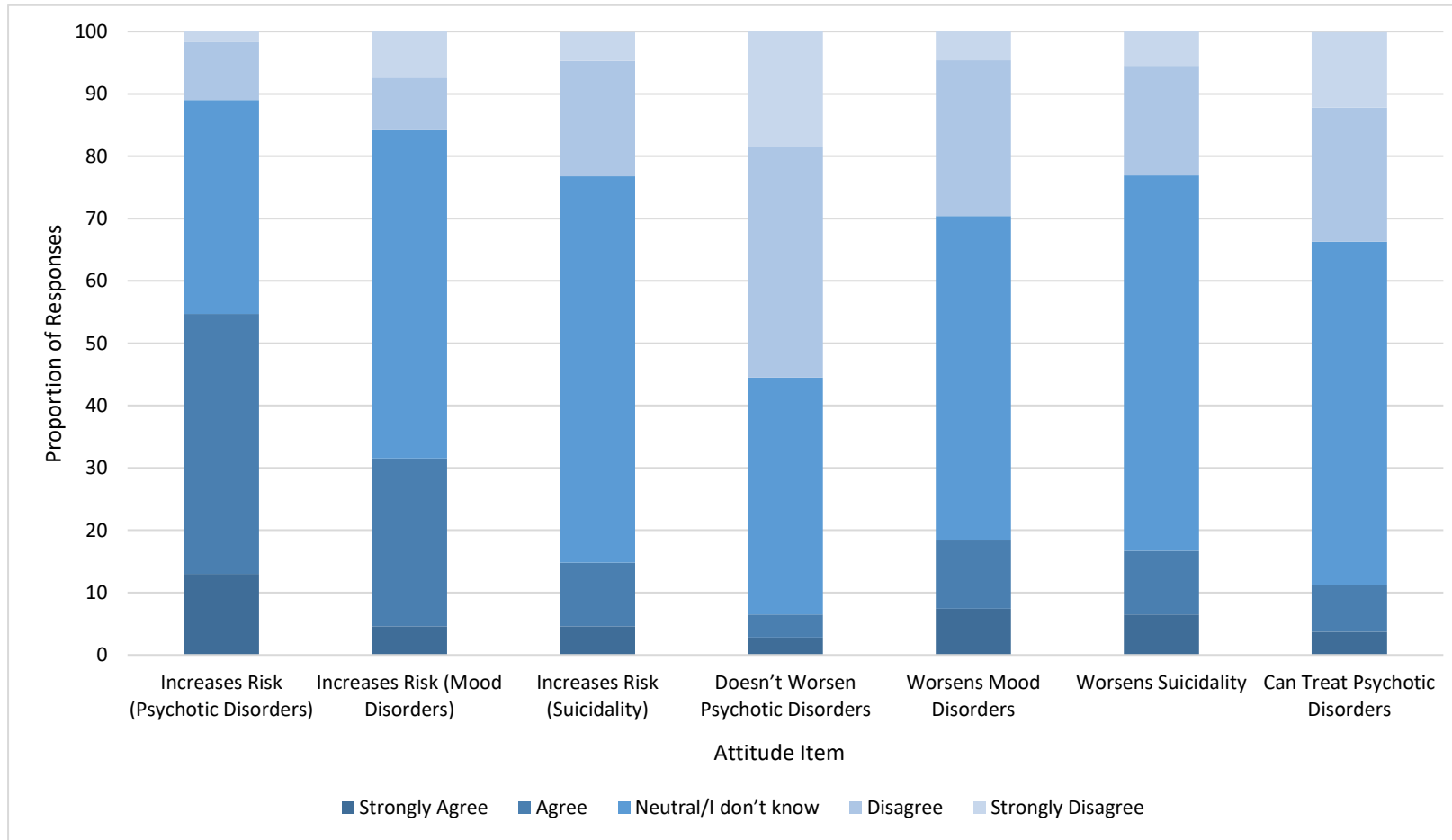


Figure 5

Disorder-specific Attitudes to PLSs and PAT



Curiosity about PAT. As another measure of participants' overall levels of openness towards PAT, participants were asked to respond to the following statement "If sufficient research suggested that psychedelic therapy was safe and effective for the treatment of some mental illnesses, and it was legalized, would you be interested in learning more about it?". Over half (54.6%, $N = 108$) of participants responded with 'Yes, Definitely Interested', and almost a third (28.7%) with 'Yes, Moderately Interested', while 7.4% selected 'Maybe', and the remaining 9.3% selected 'No, Probably Not' or 'No, Definitely Not'. It is striking that almost one in ten MHCPs in this sample would not be interested in learning about PAT, even without the uncertainty of risk and effectiveness, and the legal barriers currently in place. While this may be attributable to rigid negative opinions towards psychedelics, this may also reflect a more general reluctance to integrate new ways of working. Thus, the 9.3% may not necessarily be attributable to MHCPs not having interest in PAT specifically: psychologists in particular (who constitute the majority of the current sample) may be reluctant to incorporate novel evidence-based therapies into their practice in general, as has been found in previous research (Lilienfeld et al., 2013; Stewart et al., 2012).

3.2 Factor Structure

Exploratory factor analysis was conducted on the content areas below, as an indication of construct validity and to determine how to break content areas down for analysis (Durrheim & Tredoux, 2013). Principal Components Analysis was specified as the method for all analyses, in accordance with the purpose of the analysis being data complexity reduction (Durrheim & Tredoux, 2013).

For all analyses, all assumptions were met, including: KMO values were above 0.6, Bartlett's test of Sphericity was significant ($p < .05$), and relationships were linear. Figures discussed in this section can be seen in Appendix E.

Drug Use

Exploratory Factor Analysis (EFA) was conducted on 17 items assessing frequency of use of various illegal and legal psychoactive substances (see Appendix E). The questionnaire originally contained 18 items representing 18 distinct substances. The item assessing Ibogaine use was removed as no respondents reported any use of this substance, leaving 17 items.

Oblique rotation was specified for the initial analysis. Based on an investigation of the initial Scree plot (which indicated point of inflexion at three components) and looking at the amount of variance explained by each component, a further test was run specifying three components to extract. Results of this analysis indicated that components were relatively uncorrelated with one another (the highest correlation being .14) and as such the analysis was rerun with orthogonal rotation (varimax). For this analysis, the third component comprised only two items, both of which also loaded on other components. The analysis was rerun, specifying two components to extract.

Results of this analysis indicated that a two-component solution was appropriate. Together, the two components explained 40.02% of the variance in scores (23.02% and 12% respectively). The rotated component matrix showed a clear distinction between the components. Component one consisted of items relating to psychedelics: LSD, Mescaline, MDMA, DMT, Psilocybin, and Ketamine.

Component two consisted of items assessing use of other (non-psychedelic-like) substances: tobacco, cannabis, benzodiazepines, other narcotic analgesics, alcohol and Mandrax. The remaining items were not useful in distinguishing between components, as

they did not load on either component (heroin, caffeine, methylphenidate) or loaded on both components relatively equally (cocaine, other stimulants).

Combining this structure with theoretical reasoning, the data on drug use can be reduced to clusters of psychedelic use and other substance use.

Attitudes towards Psychedelics and PAT

Exploratory Factor Analysis (EFA) was conducted on 18 items assessing attitudes to psychedelics and psychedelic therapy (see Appendix E). Since correlation between factors is theoretically presumed, oblique rotation was used (this was later confirmed by examining component correlation matrix). Based on an investigation of the initial scree plot and the amount of variance explained by each component, a further EFA was run specifying that two factors should be extracted. Together, the two components explained 51.32% of the variance.

Three items loaded on neither factor (two relating to psychosis -- “doesn’t worsen psychotic disorders” and “can treat psychotic disorders”; and one assessing whether more research was needed to determine safety) and had very low communalities. These items were removed and the analysis rerun. For this analysis, all communalities were above the heuristic of 0.4 (Durrheim & Tredoux, 2013). Together, the factors explained 60.68% of the variance (50.2% and 10.48% respectively).

This pattern of loadings can be interpreted by examining the content of the items in each cluster. Component 2 seemed to relate specifically to the context of psychiatric *disorders* (specifically mentioning ‘disorder’ in the item’s phrasing) or a particularly severe manifestation of mental illness (suicidality). Component 1 seemed to constitute items not related to therapeutic applications of psychedelics (recreational, spiritual and self-explorative use), as well as common, often less severe mental challenges not specifically phrased as disorders (depression and anxiety), and items relating to legality. As such, these components could be reasonably summarized to reflect a cluster relating to psychedelics in the context of specific, severe mental illness (hereon termed ‘disorders attitudes’) and a cluster relating to psychedelic use in a broader context with non-specific medical and non-medical applications (hereon termed ‘general attitudes’). The two items that load on both components (items relating to safety for medical use, and to helping treatment outcomes in psychotherapy) seem to support this idea, as the content fit into either component in a theoretical sense. However,

both items loaded more strongly onto the general attitudes component, and so were incorporated into this cluster. Two of the final three items (which did not usefully distinguish between components) were incorporated into the disorders attitudes component, as they related specifically to disorders. The final item, relating to research and safety, was incorporated into the general attitudes component, given that it did not specifically relate to disorders or the context of therapy.

Conservatism (SECS)

Exploratory Factor Analysis (EFA) was conducted on 10 items assessing attitudes toward social and economic political beliefs (with the Fiscal Conservatism item excluded based on poor fit with the scale in terms of reliability -- see Section 3.3 below) (see Appendix E).

Oblique rotation was initially specified. Based on an investigation of the initial scree plot and the amount of variance explained by each component, a further EFA was run specifying that 3 factors should be extracted. Together, these components explained 52.45% of the variance in scores (27.1%, 15.64% and 9.71% respectively). Components were relatively uncorrelated; a further EFA was run with orthogonal rotation. In this analysis, one component only had one item loading onto it; given this and the original SECS scale's two-factor structure, the analysis was rerun specifying that two factors be extracted.

This solution indicates that the structure of the SECS originally observed (Everett, 2013) was, broadly, reproduced in this sample. Items originally coded in the SECS inception as part of the 'social' conservatism cluster were also clustered together in this sample as component 1 (abortion, religion, homosexual marriage, patriotism), with the exception of gun ownership, which was also clustered into component 1 in this sample, but into economic as opposed to social cluster in the original SECS formulation. However, it could be argued that gun ownership is a social as opposed to economic issue. Component 2 in this sample contained items surveying attitudes about limited government authority, military and national security, welfare benefits, business and the family unit. All of these items except two (military and national security, and the family unit) were considered part of the economic cluster in the original SECS formulation. Moreover, both items in this sample loaded on both components (though slightly more on component 2, representing broadly the 'economic'

cluster). As such, though there are slight deviations, the original factor structure was largely reproduced.

3.3 Internal Consistency

Internal consistency of the measures below was assessed using Cronbach's alpha. For all measures, the minimum value for Cronbach's alpha that was deemed an indication of acceptable internal consistency was set at .70, following general guidelines for basic research purposes, and particularly for research that compares people to one another on some dimension (Nunnally, 1978, as cited in Durrheim & Tredoux, 2013)

Attitudes Towards Psychedelics and PAT

In accordance with results from the EFA above, and with theoretical reasoning, attitudes was separated into two clusters, broadly labelled Disorders (containing 7 items) and General (containing 11 items). Internal consistency of these two clusters was assessed. Disorders yielded a CA of .763 (N = 107), while General yielded a CA of .884 (N = 104). As above, these values indicate acceptable internal consistency for both clusters of attitudes.

Conservatism (SECS)

A test for CA was performed on the 11 items of the SECS scale, yielding a result of .667. Examining the item-total statistics, the Fiscal Responsibility item had a low item-total correlation (-0.032) in comparison to other items, and when included decreased reliability of the scale. The precise reason for this item's poor relation to other items and the scale as a whole is speculative, though it is possible that the meaning of the term as it was given to respondents was ambiguous or unclear compared with the other items which were more easily understandable. Given this reasoning and the item's poor fit with the rest of the scale, the decision was taken to remove this item from the analysis. After the item's removal, CA improved to .703. This indicates adequate internal consistency.

Religiosity

Among respondents who indicated that they had some spiritual or religious affiliation (N = 85), internal consistency of the 3-item measure of religiosity was evaluated using a test of Cronbach's alpha. The result was .92, indicating excellent internal consistency.

3.4 Multiple Regression Analysis (MRA)

To determine whether any demographic characteristics, personal beliefs, knowledge around psychedelics or drug use predicted attitudes towards psychedelics and PAT, two hierarchical multiple regression analyses were conducted. The first was to determine predictors of general attitudes, while the second tested for predictors of disorder-specific attitudes (see Factor Analysis section 3.2)

Missing Data Replacement

During the data cleaning process, 18 respondents were identified to have answered only the first couple or few items of the survey. These cases were not considered comprehensive enough to retain in the analysis and were removed. However, there remained missing data throughout the dataset, where participants had not responded to particular items. This was viewed as a potential problem for the current analysis, as there may have been some pattern to this missingness that undermined the legitimacy of the results. Generally, data that is missing completely at random (MCAR - missingness does not depend on missing or observed data) or missing at random (MAR - missingness depends on observed data but not missing data) is considered ignorable by researchers, whereas data that is missing not at random (MNAR - missingness depends on missing values themselves) is not ignorable, as it could introduce a considerable amount of bias (Newman, 2014). To complicate matters, many authors contend that researchers can never truly ascertain whether data is MNAR and thus constitutes ignorable missingness, and furthermore, most data is unlikely to be MCAR in reality (Graham, 2009, McKnight et al., 2007; Newman, 2014). However, commonly used methods of handling missing data, such as listwise or pairwise deletion and single imputation techniques, can result in biased parameters and inaccurate standard errors (Newman, 2014). As such, many contend that missing data should generally be treated as non-ignorable; and handled by more sophisticated means than simple deletion methods where there is a sizeable amount of missing data throughout the dataset.

A missing value analysis was conducted on the variables to be used for regression analysis to determine the amount and pattern of missing data. Across the dataset, a sizeable proportion of variables (42.8%), and cases (34.3%) had at least one missing data value; in total 6.4% of values were missing. When examining missing value patterns, the most common pattern was that of no missing data, with other patterns occurring considerably less

frequently. Little's MCAR test was non-significant ($p > .05$), further indicating that the data was unlikely to be MNAR.

Despite this, given the uncertainty of establishing whether data MCAR, it was decided not to use deletion or single imputation methods in preparation for regression analyses. Instead, multiple imputation was employed, a technique considered to result in more accurate standard errors and less biased parameters, and one that is recommended for use in social science research (Graham, 2009, McKnight et al., 2007; Newman, 2014). This technique creates multiple imputed values for each missing data point, and then aggregates these, accounting for the inaccuracy of each single imputation and resulting in more accurate standard errors and parameters (in this case, regression coefficients) (Newman, 2014). For this analysis, the MI process was specified to create five imputations, with maximum case draws set at 100 and parameter draws at 10.

MRA: General Attitudes

Assumptions. An initial investigation of correlations between predictors indicates that multicollinearity is unlikely, with no high correlations present (all below the heuristic of .8 as a cut-off). VIF (should be below 10) and tolerance (should be above 0.2) values confirm this: all VIF values (for all imputations) were substantially below 10, while all tolerance values were substantially above 0.2. Thus multicollinearity is unlikely to be present. Scatterplots of predictors against the outcome variable indicated linear relationships. Scatterplots of standardized residuals against standardized predicted values showed no pattern or non-linear curve, indicating that the assumptions of homoscedasticity and linearity have likely been met.

Casewise diagnostics indicated that only five cases (across all imputations, $N = 782$, = .006%) fell outside of three standard deviations. Upon further inspection, all such values had acceptably low Cook's and Mahalanobis distances, and so were retained. Cook's values for all imputations are below 1, indicating that overly influential cases are likely not present. Mahalanobis values were investigated. Field (2013) suggests that acceptable Mahalanobis values can be estimated by looking at the critical value of the chi-square for a specified alpha level, and using this as a cut-off point (where df = number of predictors). Here, with 16 predictors and an alpha set at .05, the cut-off is 26.3.

34 out of 782 cases = .043% of cases had unacceptably high Mahalanobis distances in all imputations. These cases all had very low Cook's distances. In accordance with Stevens (2002, as cited in Field, 2013), given the low Cook's distances, these values were retained.

Histograms indicated that in all imputations, the outcome variable was approximately normally distributed. Standardized residuals showed minor violations from normality. However, since MRA is relatively robust to minor violations in this regard, particularly at this sample size, the analysis was continued (Durrheim & Tredoux, 2013).

Regression Model. A hierarchical model was built to predict general attitudes towards psychedelics. Demographic variables were entered into the model first, as many of these generally temporally precede other variables such as beliefs, and can be used as controls. Occupation was coded into a binary variable denoting occupations broadly in the field of psychology versus psychiatry (though the vast majority fell into the psychology field, and few respondents fell outside of the specific ‘psychologist’ or ‘psychiatrist’ label). Language was divided into English and non-English, as the vast majority of respondents selected English, with other languages constituting only a small percentage of the total. The same was true for race, which was coded as a binary (‘white’ and ‘person of colour’). Gender was already a binary variable (all respondents identified themselves as falling within the gender binary). Age was treated as a continuous variable.

Entered into the next block of the regression model was religion and conservatism. Religion was coded as a dichotomous variable (religious and not religious), as above. Conservatism (representing a composite score comprising the sum of all items on the SECS score) was considered a continuous variable. These variables, together comprising what could be termed beliefs of respondents, were entered into the second block.

The third block of the regression model included potential indicators of different types of knowledge about psychedelics or psychedelic-assisted therapy, such as whether respondents had had formal training in psychedelic substances, or professional experience with clients who reported psychedelic use (both coded as binary Yes/No variables). This block also included how up to date respondents felt they were about scientific developments in their field (1-4 on a Likert scale), as well as how many different psychedelic substances they had heard of (0-8), whether they had been exposed to negative experiences with drugs.

These variables were entered in this block on the basis that there logically could be some relation between attitudes psychedelics/PAT and different types of knowledge, but that these likely did not temporally precede engrained beliefs relating to conservatism or religion. The final block of the model contained drug use, separated into use of psychedelics/PLSs and use of other drugs (non-PLSs).

Analysis. Initial examination of the results suggests that in the original dataset, as well as three of five imputed datasets, the first model (containing only demographic variables), is significant ($p < .05$). Since pooled estimates are not available for ANOVA output, each imputed dataset is presented. Regardless of the significance of the first model, each subsequent model is significant across all imputed datasets.

An investigation of the model summaries for each imputed dataset shows that across imputations, the addition of further blocks of variables after the first model results in a significant R^2 change (ranging from $p = .000$ to $p = .042$). While the first model explains between 3.6% and 7.8% of the variance in general attitudes (depending on imputation), the addition of other blocks of variables leads to the final (fourth) model explaining between 25.4% and 30% of the variance. The addition of each block thus represents a significant improvement in the model's prediction.

Table 9 below displays pooled model coefficients. This table shows that when only demographic variables are entered into the model, age is a significant predictor of general attitudes ($p < 0.05$), such that increasing age is associated with lower scores on general attitudes items (i.e. less optimistic attitudes). Gender is also significant here, with male gender associated with higher scores ($p < .05$) indicating more optimistic attitudes. When religious and political beliefs are included, both age and gender remain significant ($p < .05$). However, when knowledge variables are added, age loses significance. In this model (model 3), the number of PLSs respondents had heard of (out of a possible 8 of the most popular PLSs) is a significant predictor of general attitudes ($p = .001$), over and above demographics, religious and political beliefs and other knowledge variables. In the final model, where respondents' drug use is included, number of PLSs heard of retains significance, $t(120) = 2.008$, $p = .049$, with higher numbers being associated with higher (more favourable) attitude scores. Additionally, in this model, respondents' own use of PLSs is also a significant predictor of general attitudes, $t(120) = 2.795$, $p = .006$, with more PLS use (past or present) being associated with more favourable attitudes. All other variables, however, were not significant predictors of general attitudes.

Pooled standardized beta values are not available for these models. However, across imputations, standardized beta values for PLS use ranged from .216 to .319 ($M = .268$). Likewise, standardized betas for number of PLSs heard of (in the final model) ranged from

.117 to .282 ($M = .226$). As such, respondent PLS use represents the strongest predictor of general attitudes.

Table 9

Pooled Coefficients: General Attitudes

Model		Unstandardized Coefficients			t
		B	Std. Error		
1	(Constant)	45.639	5.738	7.954	.000
	Age	-.130	.051	-2.538	.012
	Race	2.047	1.607	1.274	.203
	Gender	-3.272	1.491	-2.194	.029
	Language	-.545	1.574	-.346	.730
	Occupation	-1.742	1.871	-.931	.358
2	(Constant)	48.389	6.488	7.459	.000
	Age	-.106	.050	-2.119	.035
	Race	.563	1.606	.351	.726
	Gender	-3.779	1.458	-2.592	.010
	Language	-.078	1.543	-.050	.960
	Occupation	-1.822	1.755	-1.038	.304
	Conservatism	-.094	.053	-1.770	.077
	Religion	2.647	1.365	1.940	.053
3	(Constant)	39.033	7.473	5.223	.000
	Age	-.088	.050	-1.756	.081
	Race	-.797	1.605	-.497	.620
	Gender	-2.968	1.460	-2.033	.044
	Language	.615	1.694	.363	.719
	Occupation	-3.528	1.869	-1.887	.064
	Conservatism	-.077	.051	-1.498	.134
	Religion	2.198	1.338	1.643	.101
	Up To Date	-.020	.921	-.022	.982
	Formal Training	.012	.806	.015	.988
	Professional	.544	1.294	.420	.674
	Experience				
	Number Heard Of	1.238	.415	2.983	.003
	NegativeXP_anyDrugs	-1.758	1.331	-1.321	.187
	HeardOf_SafePsychedelicUse	2.706	1.568	1.726	.088
	HeardOf_PsychedelicTherapy	.366	1.727	.212	.832
4	(Constant)	38.404	7.151	5.370	.000

Age	-.087	.051	-1.693	.094
Race	-.630	1.569	-.401	.688
Gender	-2.099	1.434	-1.464	.145
Language	.693	1.659	.418	.679
Occupation	-3.186	1.773	-1.797	.076
Conservatism	-.062	.050	-1.232	.218
Religion	1.550	1.362	1.138	.257
Up To Date	.079	.973	.081	.936
Formal Training	-.253	.806	-.314	.754
Professional Experience	.134	1.311	.103	.918
Number Heard Of	.924	.460	2.008	.049
NegativeXP_anyDrugs	-2.013	1.274	-1.580	.114
HeardOf_SafePsychedelicUse	2.671	1.458	1.831	.068
HeardOf_PsychedelicTherapy	.469	1.748	.269	.789
Drug Use PLS	.811	.290	2.795	.006
Drug Use Non-PLS	-.003	.207	-.014	.989

Discussion. These results indicate that over and above the influence of demographics, religious and political beliefs, and knowledge variables, PLS use and the number of PLSs respondents had heard of were significant predictors of more open or positive general attitudes towards psychedelics and PAT.

It seems plausible that participants who have had personal experience with psychedelics have more favourable attitudes towards these substances, given that these experiences are more likely to be positive than negative overall, based on the substantial body of literature indicating the general benefits and low risk profile associated with psychedelic use (for reviews, see Berkovitch et al., 2021; Chi & Gold, 2020).

It is striking that these were the only significant predictors of general attitudes in this sample. A recent survey of psychiatrists in the US (Barnett et al., 2018), which serves as the only published direct comparison study to the current investigation, found a range of associations between attitudes to psychedelics and demographics, occupation variables and knowledge. They found that male gender, lower level of training in psychiatry, and younger age were all associated with more favourable and optimistic attitudes towards psychedelics

and psychedelic therapy. However, this study was limited in that it did not use parametric measures to analyse data, and did not control for the influence of any potential confounds. The present regression results provide contextualization of Barnett et al.'s (2018) findings, showing that (male) gender and (younger) age are significant predictors of attitudes, but only up to the point that the influence of knowledge variables is considered. The underlying explanation for the significance of gender, for instance, in Barnett et al.'s (2018) study could even perhaps be explained by male gender being associated with higher levels of drug use, including psychedelics (McHugh et al., 2018). For instance, in the current sample, after all assumptions were checked and confirmed, a linear regression analysis was conducted to assess the association between gender and drug use; male gender was found to be significantly associated with higher use of PLSs, $t(108) = -2.393$, $p = .018$, with a standardized beta value of $-.224$. Non-PLS use was not significantly associated with gender. Lower exposure to drug use, then, could explain the association between gender and attitudes in the present sample, and perhaps in previous research. However, there are various potential confounds in this association, and it would be premature to posit any conclusions in this regard before further research is conducted.

The number of PLSs participants had heard of is an indication of their level of knowledge around psychedelics in general, and could relate to more exposure to research in the area or their own PLS use; perhaps participants who have heard of many PLSs have also had more exposure to recent positive research findings and/or personal experience using PLSs, and this explains their more positive attitudes. Indeed, the correlation between PLS use and number of PLSs heard of was $.372$, which was significant, $p < .001$. It could also be that participants who have positive attitudes towards psychedelics and PAT are compelled to learn more about these substances and so become aware of different psychedelics.

MRA: Disorder-specific Attitudes

For this analysis, predictor variables and their grouping into blocks mirrored those in the analysis above, while the outcome variable was disorder-specific attitudes score.

Assumptions. An initial investigation of correlations between predictors indicates that multicollinearity is unlikely, with no high correlations present (all below the heuristic of $.8$ as a cut-off). VIF (should be below 10) and tolerance (should be above 0.2) values confirm this:

all VIF values (for all imputations) were substantially below 10, while all tolerance values were substantially above 0.2. Thus multicollinearity is unlikely to be present.

Scatterplots of predictors against the outcome variable indicated linear relationships. Scatterplots of standardized residuals against standardized predicted values showed no pattern or non-linear curve, indicating that the assumptions of homoscedasticity and linearity have likely been met.

Casewise diagnostics indicated that only two cases (across all imputations, $N = 782$, = .003%) fell outside of three standard deviations. Upon further inspection, both values had acceptably low Cook's and Mahalanobis distances, and so were retained. Cook's values for all imputations are below 1, indicating that overly influential cases are likely not present. Mahalanobis values were investigated. Here, with 16 predictors and an alpha set at .05, the cut-off is 26.334 out of 782 cases (across imputations) = .043% of cases had unacceptably high Mahalanobis distances in all imputations. These cases all had very low Cook's distances. In accordance with Stevens (2002, as cited in Field, 2013), given the low Cook's distances, these values were retained.

Histograms indicated that in all imputations, the outcome variable was approximately normally distributed. Standardized residuals showed minor violations from normality. However, since MRA is relatively robust to minor violations in this regard, particularly at this sample size, the analysis was continued (Durrheim & Tredoux, 2013).

Analysis. Initial examination of the results suggests that in the original dataset and most imputations (Table 10), most models are not significant: in only two of five imputations, the final two models are significant ($p < .05$). This is reiterated by model summaries, which show that in only two of the five imputations, the final two models represent a significant improvement in prediction. In these significant imputations, model 3 explains between 10.3 and 11% of the variance in attitudes, while model 4 explains between 14.5 and 14.7% of the variance.

When examining pooled coefficients, only one variable in the final model is significant as a predictor of disorder-specific attitudes: respondents who reported having been exposed to a negative experience with any illegal or legal drugs had significantly less open or optimistic disorder-specific attitudes towards psychedelics/PLSs and PAT, $t(120) = -2.016$, $p = .047$.

Pooled standardized beta values are not available for multiply imputed models. However, across imputations, standardized beta values for negative drug experiences ranged from -.145 to -.278 ($M = -.225$).

Table 10

Pooled Coefficients: Disorder-Specific Attitudes

Model		Unstandardized Coefficients			t
		B	Std. Error		
1	(Constant)	21.526	3.924	5.486	.000
	Age	-.038	.032	-1.193	.237
	Race	.168	.981	.171	.865
	Gender	-1.010	.980	-1.031	.308
	Language	.694	1.067	.650	.522
	Occupation	.492	1.142	.430	.671
2	(Constant)	22.718	4.824	4.709	.000
	Age	-.033	.033	-.995	.324
	Race	-.187	1.001	-.187	.852
	Gender	-1.109	.976	-1.136	.261
	Language	.810	1.062	.762	.453
	Occupation	.451	1.147	.393	.698
	Conservatism	-.028	.032	-.867	.386
	Religion	.427	.863	.495	.622
3	(Constant)	19.769	5.230	3.780	.000
	Age	-.027	.031	-.872	.385
	Race	-.889	.964	-.923	.356
	Gender	-.758	.995	-.762	.451
	Language	.880	1.131	.778	.447
	Occupation	-.731	1.412	-.518	.612
	Conservatism	-.028	.032	-.878	.381
	Religion	.362	.875	.414	.680
	Up To Date	.317	.568	.557	.579
	Formal Training	.381	.492	.775	.439
	Professional Experience	-.144	.922	-.156	.877
	Number Heard Of	.545	.281	1.941	.058
	NegativeXP_anyDrugs	-1.628	.880	-1.850	.068
	HeardOf_SafePsyched	1.496	1.169	1.279	.217
	elicUse				

	HeardOf_PsychedelicT herapy	.092	1.364	.067	.947
4	(Constant)	19.343	5.046	3.833	.000
	Age	-.025	.030	-.843	.400
	Race	-.850	.974	-.872	.384
	Gender	-.372	1.023	-.364	.718
	Language	.887	1.124	.790	.440
	Occupation	-.587	1.381	-.425	.677
	Conservatism	-.021	.033	-.649	.517
	Religion	.077	.910	.084	.933
	Up To Date	.366	.589	.621	.539
	Formal Training	.274	.492	.557	.578
	Professional Experience	-.348	.942	-.370	.714
	Number Heard Of	.400	.264	1.519	.130
	NegativeXP_anyDrugs	-1.774	.880	-2.016	.047
	HeardOf_SafePsyched elicUse	1.472	1.146	1.285	.215
	HeardOf_PsychedelicT herapy	.170	1.420	.120	.906
	Drug Use PLS	.350	.208	1.680	.103
	Drug Use Non-PLS	.025	.112	.221	.825

Discussion. It is unsurprising that participants who had been exposed to a negative experience with any substance (either directly themselves or a close friend or family member) had less favourable attitudes towards psychedelics. Participants are likely to have internalised the dominant societal framing of psychedelics which tends to reduce all illegal substances to being dangerous (to varying degrees) and having little value to society in general, a view perpetuated by the legal status of these substances in most of the world (Taylor, Buchanan & Ayres, 2016). As such, negative experiences with other substances are likely to carry over into negative attitudes towards psychedelics. It is important to note here that although participants were asked whether they had had exposure to *any* negative drug experience, whether that substance was illegal or legal, the majority of participants described experiences with illegal substances.

Further, the negative experiences participants reported that were related to psychedelics are all the more straightforward in interpretation -- negative experiences with a substance could

surely lead to generalised negative attitudes regarding that and related substances. It is interesting, however, that these negative attitudes relate to the disorder-specific component of attitudes, and not the general attitudes component.

However, the disorder-specific component contains many items relating to *risk* and *worsening* of disorders, and contains more negatively-valenced items overall, whereas the general attitudes component contains more positively-valenced items, and items relating to psychedelic use in the average individual. It may be, then, that participants who have had exposure to negative experiences are more sensitive to items relating to risk from drug use, and the dangers of drug use, and so are more likely to express negative attitudes in relation to these items; as compared with general questions and those that are more positively-valenced (for instance, ‘useful for self-exploration’ or ‘safe for religious use’).

3.5 Chi-Square Tests of Association

Chi-square tests of association were conducted to examine relationships between individual psychedelics/PAT attitude items and demographic, knowledge, and belief variables. In this section, results of all analyses are described, and afterwards discussed. For chi-square analyses to be conducted, some continuous variables were divided into the following categories:

- SECS political items: 18-35, 36-55, 56+
- Overall drug use score: ≤ 14 , ≥ 15
- Age: ≤ 35 , 36-55, 56+
- Year highest qualification was obtained: pre-2010; 2010-2020

Overall drug use score was divided into even groups by dividing the maximum score by 2. Age groups were derived from common demarcations indicating ‘Young Adult’, ‘Middle Aged’ and ‘Older Adult’ (Petry, 2002). Year of highest qualification was divided into pre-2010 and 2010+. This was on the basis that 2010 marked the beginning of an upward trend in the rate of research involving psychedelics (Beckley Foundation, 2017). If clinical/counselling psychologists and psychiatrists were not as immersed in the same breadth of academic research after their qualification, then those who obtained their qualification from 2010 onwards may have had more exposure to the boom in psychedelic research studies.

The categories of some existing ordinal variables were collapsed in order to form fewer categories for each variable. This was done with the aim of reaching a balance between retaining nuance in the data on the one hand, and condensing the data enough for chi-square analyses to be possible (given the assumption that for each analysis, there must be at least 5 observations for each expected cell for most of the data). The outcome of this re-categorization of variables is outlined below:

- Information source (PAT): condensed into academic (professional training, academic sources); non-academic (news media, entertainment media, friends/family); other media
- All attitude variables individually: condensed into trichotomous variables (agree, neutral, disagree)
- Up to date with scientific developments: condensed into low ('not at all', 'a little'); medium ('somewhat'); high ('very up to date')

Despite this collapse of categories, some chi-square tests still resulted in expected frequencies being unacceptably low, using the heuristic that expected frequencies in at least 80% of cells must be greater than 5 (Durrheim & Tredoux, 2013). For such tests, results are not interpretable. For particular variables under examination, all results violated this assumption; these variables are omitted from the results presented. Other key assumptions for chi-square tests (mutual exclusiveness and exhaustiveness of categories, independence of observations) were met.

Significant results are presented in the tables below, along with examinations of adjusted standardized residuals. For full tables of results from all analyses (i.e. including nonsignificant results), see Appendix G.

Results

Table 11

Chi-square Test: “Psychedelic Use Is safe for recreational purposes”

Measures	χ^2	N	df	sig.
Gender	8.12	108	2	.017
Patriotism	14.12	108	4	.007
Military/National Security	9.61	108	4	.048
Drug Use	13.01	108	4	.007
Heard of Safe Psychedelic Use	6.264	108	2	.044

Safety for recreational use was found to be significantly associated with gender, attitudes towards the concepts of patriotism and military/national security, whether participants had heard of safe psychedelics use, as well as levels of reported drug use. Adjusted standardized residuals showed that respondents who identified as female were less likely than expected to agree with the statement that psychedelic use “is safe for recreational purposes”. Respondents who rated the concepts of ‘patriotism’ as well as ‘military/national security’ less positively (scores ≤ 33), were more likely than expected to agree with the statement, while those who gave moderately positive scores (34 - 67) were significantly less likely than expected to agree with the statement. Respondents who had heard of safe psychedelic use, and those who reported higher levels of drug use (15+), were more likely than expected to agree with the statement.

Table 12

Chi-square Test: “Psychedelic use is safe for religious/spiritual purposes”

Measures	χ^2	N	df	sig.
Professional Experience	7.785	108	2	.020
Qualification Year	8.154	101	2	.017
Heard of Safe Use	9.833	108	2	.007
Info Source (PAT)	16.868	93	4	.002
Drug Use	14.640	93	2	.001

Safety for religious or spiritual purposes was found to be associated with professional experience (with patients who reported psychedelic use), year of highest qualification (in field of psychology/psychiatry), whether respondents had heard of safe psychedelic use, and respondents' overall level of drug use. Respondents with professional experience, and those who reported higher drug use levels (score of 15+), were more likely than expected to agree with the statement that psychedelic use is safe for religious/spiritual purposes, and less likely than expected to select 'neutral/I don't know'. Respondents who had obtained their highest qualification more recently (2010 - 2020), and those who had heard of safe psychedelic use, were more likely than expected to agree with the statement. Respondents who cited their main information source about PAT as being non-academic (friends/family, entertainment/news media) were more likely than expected to select 'neutral/I don't know', and less likely than expected to agree with the statement, while those who cited other media were more likely to agree, and less likely than expected to select 'neutral/I don't know'; those who cited academic sources were also less likely than expected to agree with the statement.

Table 13

Chi-square Test: "Psychedelic substances could be used to treat anxiety"

Measures	χ^2	N	df	sig.
Negative Drug Experience	6.155	108	2	.046
Heard of Safe Psychedelic Use	12.200	108	2	.002
Heard of PAT	9.356	108	2	.009
Drug Use	8.646	93	2	.013

Potential to treat anxiety was found to be associated with exposure to negative drug experiences (either first-hand or friends/family), whether respondents had heard of both safe psychedelics use and PAT, and level of overall drug use. Respondents who reported exposure to a negative drug experience, as well as those who had heard of PAT and those who had heard of safe psychedelic use, were more likely to agree with the statement, and less likely than expected to select 'neutral/I don't know'. Finally, respondents who reported higher levels of drug use (15+) were more likely than expected to agree.

Table 14

Chi-square Test: "Psychedelic substances could be used to treat depression"

Measures	χ^2	N	df	sig.
Race	8.706	108	2	.013
Heard of Safe Psychedelic Use	7.402	108	2	.025
Drug Use	15.421	93	2	.000

Potential to treat depression was found to be associated with race, whether participants had heard of safe psychedelic use, and level of drug use. White respondents were more likely than expected to agree with the statement that psychedelics "could be used to treat depression", and less likely than expected to select 'neutral/I don't know'. Respondents who had heard of safe psychedelic use, and those who reported higher levels of drug use, were more likely than expected to agree with the statement and less likely than expected to select a neutral response.

Table 15

Chi-square Test: "Psychedelics may improve treatment outcomes when used during psychotherapy"

Measures	χ^2	N	df	sig.
Race	6.585	108	2	.037
Professional Experience	6.825	108	2	.033
Heard of Safe Psychedelic Use	13.750	108	2	.001
Heard of PAT	16.471	108	2	.000
Drug Use	16.259	93	2	.000

Attitudes towards psychedelics being used in psychotherapy were associated with race, professional experience, whether respondents had heard of safe psychedelics, and of PAT, and levels of drug use. Respondents of colour, as well as respondents who did not have

professional experience with patients who reported psychedelic use, and those who had not heard of PAT, were less likely than expected to agree with the statement that psychedelics “may improve treatment outcomes when used during psychotherapy” , and more likely than expected to select a neutral response. Respondents who had heard of safe psychedelic use were more likely than expected to agree with the statement, and less likely than expected both to disagree and to give a neutral response.

Table 16

Chi-square Test: “Psychedelics should be legal for personal use”

Measures	χ^2	N	df	sig.
Gender	8.236	108	2	.016
Religion	10.639	108	2	.005
Heard of Safe Psychedelic Use	8.044	108	2	.018
Drug Use	8.271	93	2	.016

Attitudes towards legality of psychedelics for personal use were associated with gender, religion, whether participants had heard of safe psychedelic use, and drug use. Female respondents, as well as those who reported a religious or spiritual affiliation, were more likely to give a neutral response and less likely than expected to agree with the statement that “psychedelics should be legal for personal use”. Respondents who had heard of safe psychedelic use, and those who reported higher drug use levels, were more likely than expected to agree with the statement and less likely to disagree.

Table 17

Chi-square Test: “Psychedelics show promise in treating psychotic disorders”

Measures	χ^2	N	df	sig.
Occupation	10.948	107	2	.004

Attitudes towards the use of psychedelics to treat psychotic disorders was found to be associated with occupation, such that psychologists, compared with psychiatrists, were more

likely than expected to select a neutral response to the statement “psychedelics show promise in treating psychotic disorders”, and less likely than expected to disagree with the statement.

Table 18

Chi-square Test: “Psychedelics are unsafe for recreational use”

Measures	χ^2	N	df	sig.
Race	6.258	107	2	.044
Heard of Safe Psychedelic Use	6.082	107	2	.048
Up to Date	11.542	107	4	.021

Attitudes towards safety of psychedelics for recreational use were associated with race, whether respondents had heard of safe psychedelic use, and whether respondents considered themselves up to date with scientific developments in their field. White respondents were less likely than expected to give a neutral response to the statement “psychedelics are unsafe for recreational purposes” (but not significantly more/less likely to agree or disagree). Respondents who had heard of safe psychedelic use were more likely than expected to disagree with the statement. Finally, respondents who considered themselves to be moderately up to date with scientific developments in their field were more likely than expected to give a neutral response and less likely to agree with the statement, while those who reported not being as up to date (‘low’) were less likely than expected to give a neutral response (but not significantly more/less likely to agree or disagree).

Table 19

Chi-square Test: “Psychedelics are unsafe under medical supervision”

Measures	χ^2	N	df	sig.
Race	15.285	106	2	.000
Heard of Safe Psychedelic Use	29.208	106	2	.000

Attitudes towards the safety of psychedelics under medical supervision were associated with race and whether participants had heard of safe psychedelic use. White respondents, as well as those who had heard of safe psychedelic use, were more likely than

expected to disagree with the statement that “psychedelics are unsafe under medical supervision”.

Table 20

Chi-square Test: “Psychedelics should not be legal for medical use under supervision”

Measures	χ^2	N	df	sig.
Heard of Safe Psychedelic Use	18.491	107	2	.000

Respondents who had heard of safe psychedelic use, compared to those who had not, were more likely than expected to disagree with the statement that “psychedelics should not be legal for medical use under supervision”, and less likely than expected to give a neutral response.

Table 21

Chi-square Test: “Psychedelics increase risk of future mood disorders”

Measures	χ^2	N	df	sig.
Religion	8.995	108	2	.011
Heard of Safe Psychedelic Use	7.817	108	2	.020
Drug Use	7.250	93	2	.027

Attitudes towards psychedelics and risk of mood disorders were associated with religion, having heard of safe psychedelic use or not, and overall drug use levels. Participants who reported having a religious or spiritual affiliation were more likely than expected to agree with the statement that “psychedelic use increases risk of future mood disorders”. Those who had heard of safe psychedelic use, compared to those who had not, were more likely than expected to disagree with the statement and less likely to give a neutral response.

Finally, respondents who reported higher drug use were more likely than expected to disagree.

Table 22

Chi-square Test: "Psychedelics increase risk of suicidality"

Measures	χ^2	N	df	sig.
Religion	7.870	108	2	.020
Qualification Year	7.704	101	2	.021
Heard of Safe Psychedelic Use	11.338	108	2	.003

Attitudes towards psychedelics and risk of suicidality were associated with religion, year of highest qualification and whether participants had heard of safe psychedelic use. Respondents who reported no religious or spiritual affiliation, and those who had heard of safe psychedelic use, were more likely than expected to disagree with the statement that "psychedelics increase risk of suicidality", and less likely to agree. Participants who obtained their highest qualification between 2010 and 2020 were less likely than expected to agree with the statement, compared to those who obtained this before 2010.

Table 23

Chi-square Test: "Psychedelic use worsens existing mood disorders"

Measures	χ^2	N	df	sig.
Qualification Year	7.127	101	2	.028
Heard of Safe Psychedelic Use	13.290	108	2	.001

Attitudes toward psychedelics worsening mood disorders were associated with year of highest qualification obtained, and whether participants had heard of safe psychedelic use. Respondents who obtained their qualification before 2010 were more likely than expected to

agree with the statement that “psychedelic use worsens existing mood disorders”, and less likely to give a neutral response. Those who had heard of safe psychedelic use were more likely than expected to disagree with the statement, and less likely to agree.

Table 24

Chi-square Test: “Psychedelic use worsens existing suicidality”

Measures	χ^2	N	df	sig.
Heard of Safe Psychedelic Use	9.761	108	2	.008

Attitudes towards psychedelics worsening suicidality were associated with whether participants had heard of safe psychedelic use. Those who had heard of safe use were more likely than expected to disagree with the statement that “psychedelic use worsens existing suicidality”, and less likely to agree.

Discussion

Drug Use. Overall respondent drug use (illegal and legal drugs, and frequency of use) was found to be associated with various attitude items. Higher levels of drug use were associated with higher agreement that psychedelics are safe for both recreational and for religious/spiritual purposes, could be used to treat both anxiety and depression, could improve treatment outcomes during psychotherapy, and should be legal for personal use. Higher overall drug use was also associated with higher levels of disagreement that psychedelics increase risk of future mood disorders. Participants who use more substances or use substances more frequently overall may be more likely to consider psychedelics safe due to personal experience with these substances; since adverse events are statistically rare (for a review, see Chi & Gold, 2020). Moreover, participants with personal experience using psychedelics may have experienced therapeutic benefits from them, and not experienced deterioration in mental health (particularly mood disorders) which could explain this association. The causation could also run in the reverse, with participants who already held more positive views about the safety and treatment potential of psychedelics seeking these substances out. Though presumably, if this is the direction of causation, participants’

experiences of psychedelics did not afterwards result in their views becoming negative overall.

Demographic Characteristics. In relation to demographic variables, some attitudes were found to depend on gender, race and occupation. Female gender was associated with lower agreement that psychedelics should be legal for personal use, and lower agreement that psychedelics are safe for recreational use. White race was associated with higher agreement that psychedelics could be used to treat depression, and could improve treatment outcomes when used during psychotherapy, as well as higher disagreement that psychedelics are unsafe under medical supervision. Being a psychologist was found to be associated with higher agreement that psychedelics could treat psychotic disorders; the reverse was found for psychiatrists.

In a recent similar survey of attitudes to psychedelics among psychiatrists (Barnett et al., 2018), women displayed less favourable attitudes to psychedelics on various items: whether they should be legal for recreational use, and for medical use, as well as whether they could be effective when used in psychotherapy, and deserve further research. These results converge with the present study in terms of the item on legality. However, in the present study, the differences for female gender lay particularly in the use of psychedelics that was unsupervised or monitored (items related specifically to ‘recreational use’, ‘personal use’). One possible explanation for women’s lower than expected favourability to personal use could relate to lower levels of drug use in general. Female gender is consistently found to be related to lower levels of illegal drug use (McHugh et al., 2018). In the current sample, after all assumptions were checked and confirmed, a linear regression analysis was conducted to assess this (see Appendix F); female gender was found to be significantly associated with lower use of PLSs, $t(df) = -2.393$, $p = .018$, with a standardized beta value of $-.224$. Non-PLS use was not significantly associated with gender (see Appendix F). Lower exposure to personal drug use, then, could explain the association between gender and attitudes to personal use. However, no causality can be established with this data, and further research is required that investigates the possible mediating role of drug use in the relationship between gender and attitudes.

In terms of race, white respondents, but not respondents of colour, seemed to hold more favourable attitudes than expected towards psychedelics in therapeutic contexts - with

higher levels of agreement that psychedelics could treat depression and improve treatment outcomes in psychotherapy, and lower agreement that these substances are unsafe under medical supervision. Literature in this regard is limited; with some research showing, for instance, that African-American students were less favourable to tobacco use, but not alcohol and other drug use (Stern & Wiens, 2009). The possible explanation that similar to gender, psychedelic use could mediate the relationship between race and attitudes, was considered. In the current sample, however, there was no significant difference between white respondents and respondents of colour in PLS use (see Appendix F). As such, the role of race in predicting attitudes towards psychedelics remains unclear; further research is needed to investigate this relationship.

The explanation for the positive association found between being a psychologist and agreement that psychedelics could treat psychotic disorders, and the reverse association in psychiatrists, is equally unclear. In terms of the potential for PLSs in treating psychotic disorders, a recent review of RCTs involving psychedelics found that across various studies, psychedelics did not have any effect on psychosis (Chi & Gold, 2020). It is possible that psychiatrists, with their greater emphasis on biological, physiological determinants of mental health, may place more emphasis on the similarity between psychosis and the neurological effects of psychedelics (Leptourgos et al., 2020), and as a result express reservations about this potential avenue of treatment.

Beliefs. There seemed to be a greater openness to psychedelics on some dimensions among respondents who identified as having no spiritual or religious affiliation, with these respondents showing higher levels of support for legality of PLSs (for personal use), and lower agreement that PLSs increase risk of mood disorders and suicidality. Research on religion and attitudes is generally limited to the context of substance use *disorders* (Kendler et al., 2003). Research on general drug use and religion suggests that people who identify as religious show lower levels of substance use, including alcohol, tobacco, prescription drugs, cannabis and illegal substances (Ford & Hill, 2012; Hill, et al., 2009). The relationship between religion and substance use was assessed in this sample, with linear regression showing that identifying as religious or spiritual was significantly associated with lower levels of PLS use, $t(108) = 3.106$, $p = .002$, but not lower levels of non-PLS use (see Appendix F). As such, it is possible that PLS use mediates the relationship between religiousness and attitudes here. However, other factors, such as a general association

between liberalism and atheism (Eagleton, 2009; LeDrew, 2012) could explain in particular the association between support for legality for personal use and irreligiousness.

In the current sample there was an association between lower levels of positivity towards concepts of ‘patriotism’ and ‘military/national security’, and higher agreement that PLSs are safe for recreational use. It is unclear why *safety* would be associated here; though a link between liberalism, reservations about state control (military) and a desire to frame PLSs as acceptable in unsupervised, non-institutionalised contexts (recreational use) is possible. However, this is speculative, and conclusions cannot be drawn about this from the current sample alone.

Knowledge. More recent attainment of highest qualification in their profession was associated with higher than expected levels of agreement that PLSs are safe for religious/spiritual purposes, and lower disagreement that PLSs increase risk of suicidality and worsen existing mood disorders. This apparent higher level of openness to PLSs among those with more recent qualifications could be explained by age, with younger participants obtaining their qualifications more recently, and younger participants being more open to PLSs. This was hypothesized in Barnett et al.’s (2018) study, which found that younger psychiatrists and trainees were more optimistic about psychedelic substances in terms of potential therapeutic benefits. However, the authors concluded that this association was more likely to be explained by younger participants being exposed to more positive information about psychedelics in scientific literature (as well as news media), and conversely having less exposure in the past to negative news coverage or negative direct or indirect experience with psychedelics. In the present sample, it is unclear whether age is the underlying reason for this association; due to violation of assumptions, chi-square analyses could not determine whether age was associated with individual items assessing attitudes to PLSs and PAT. However, it seems plausible that those with qualifications obtained from 2010 onwards have been more exposed to the boom in psychedelic research in the last decade (research that underscores the safety of PLS use and the low level of risk posed for mental illnesses in general), and so have more favourable attitudes in these areas. This line of reasoning is supported by another finding, that respondents being moderately up to date with scientific developments in their profession was associated with lower agreement that psychedelics are unsafe for recreational use. However, it must again be emphasised that these associations are speculative, and further research is needed to investigate this more thoroughly.

Whether participants had heard of individuals using psychedelics safely was associated with the vast majority of attitude items. Having heard of individuals using psychedelics safely was associated with higher levels of agreement that psychedelic use is safe for religious/spiritual and for recreational purposes, as well as that psychedelics could be used to treat both anxiety and depression, may improve treatment outcomes during psychotherapy, and should be legal for personal use. Those who had heard of healthy individuals using psychedelics safely also showed higher than expected levels of disagreement that psychedelics are unsafe, both for recreational use and under medical supervision, that psychedelics should not be legal for medical use, that psychedelics increase risk of both suicidality and mood disorders, and that psychedelics worsen existing mood disorders and suicidality.

It is intuitive that having heard of safe psychedelic use would relate to more favourable views on psychedelics in general. The breadth of association here -- this was associated with the vast majority of attitude items -- underscores that participants likely rely on indirect experience such as this in forming attitudes towards psychedelics and PAT. This is especially understandable due to the limited formal and professional training participants reported receiving about psychedelics and PAT. It could also be argued, however, that those with more optimistic views about psychedelics and PAT seek out positive affirmation of these views in the form of stories of safe use of psychedelics. Regardless, it is interesting in relation to this that participants having had (direct or indirect) exposure to *negative* experiences with substances was not significantly associated with as many attitudes here; for this, chi square analyses were nonsignificant for all except one attitude item. Perhaps this is explained by the fact that the personal experience here is with *any* substance, and not with PLSs specifically (whereas the safe use personal experience item relates to psychedelic substances specifically).

Where the significance lay with negative drug experiences in the current sample was in a positive association between having had a negative drug experience (directly, or indirectly via friends or family), for instance being exposed to a drug overdose or addiction, and higher levels of agreement that PLSs could be used to treat anxiety. This is in contrast to the main regression analysis (see Section 3.4), wherein negative drug experiences were positively associated with lower overall support for psychedelics and PAT in treatment contexts for specific disorders (for instance, mood and psychotic disorders) and severe symptoms (suicidality), rather than general treatment contexts (for ‘anxiety’).

Respondents who had professional experience with patients who reported psychedelic use were found to have higher than expected levels of agreement that psychedelics could improve treatment outcomes during psychotherapy. This lends support to the idea that participants may rely on indirect experience in forming their attitudes towards psychedelics.

There was an association between participants obtaining most information about PAT from academic and non-academic information sources, and lower agreement that psychedelics are safe in religious or spiritual contexts. Conversely, those who obtained most information about PAT from Other Media (for instance, from forums, blogs, encyclopaedias and social media) showed higher than expected agreement that psychedelics are safe in religious or spiritual contexts. This could relate to the proliferation of psychedelics discussions, often around religion or spirituality, in online forums and on platforms such as YouTube and Reddit (Andersson & Kjellgren, 2019; Frias, 2011; Pestana, et al., 2020).

The final finding from these analyses was that having heard of PAT was associated with higher levels of agreement that psychedelics could be used to treat anxiety, and may improve treatment outcomes when used in psychotherapy. It seems plausible that those who had heard of PAT had heard of this therapy in a positive context, which would explain this association.

In sum, there were various associations found in the current sample between attitudes towards psychedelics, and participant demographics, knowledge, drug use, and beliefs. Overall, participants with higher drug use scores and those who had heard of safe psychedelic use were more likely than expected to report more favourable attitudes. Political and religious beliefs, other knowledge characteristics and sociodemographic variables were also found to associated with particular attitudes for some items. There are a multitude of possible explanations for these associations. Findings from qualitative data aid in elucidating potential explanations and make meaning of these trends.

3.6 Themes & Discourses in Talk about Psychedelics and PAT

Three central themes developed from participants' responses⁵ to open-ended items across the questionnaire. The first is the theme of psychedelics as endangerment, delineated into sub-themes of addiction and abuse, and inducing madness. This theme encapsulates

⁵ For this discussion, participant quotes, unless otherwise stated, convey the essence of a viewpoint expressed by a subsection of the sample. Due to space limitations, not all quotes espousing a particular perspective could be included.

participants' tendencies to draw on a discourse of prohibition, and within this, a discourse of pathology, in constructing psychedelics and PAT. The second theme, psychedelics as revealing the hidden, focuses on participants' use of 'psychological' and 'entheogenic' discourses in constructing psychedelics and PAT as tools for psychodynamic interpretation or spiritual exploration. The final theme, psychedelics as a question of freedom and personal choice, is concerned with participants' use of a discourse of liberalism in their constructions. Taken together, these themes encapsulate both negative and positive positionings within participants' discourse, but provides more detail around their concerns, understandings and interest in psychedelics and PAT. Since comparison studies are scant in the literature, this discussion draws largely on the work of a few key authors in situating the findings in current research.

Psychedelics as Endangerment

A prominent theme that was drawn from the data centred around understanding psychedelics as dangerous in various ways. Principally, participants expressed concerns about psychedelics triggering psychosis, and their potential for abuse and addiction. In this regard, participants seemed particularly apprehensive about personal or recreational use of psychedelics, though many were also sceptical of safety in therapeutic contexts. Concerns were raised about "addiction and impact on communities and families - particularly families living in poverty", and about "drug-induced psychosis and schizophrenia" and "serious psychological problems" as a result of psychedelic use. Often these anxieties were framed as concerns about 'drugs' in general terms, rather than psychedelics specifically. For instance, in response to questions relating specifically to psychedelics substances, participants expressed sentiments such as, "studies seem to show that drugs can exacerbate symptoms in ppl with underlying conditions", and "I have treated patients who have used drugs and their addictions have ruined their lives". This was the most prominent theme observed in the data as a whole, appearing in between a third and half of participants' responses.

In order to unpack this theme of endangerment, it is useful to examine the discourses participants draw on in constructing psychedelics and the people who consume them. Perhaps most pertinent to the present discussion is what is sometimes termed the 'prohibition discourse' (Letcher, 2007) or the 'prohibitionist reductionist' discourse (Taylor et al., 2016). This prohibitionist discourse can be traced back to the US alcohol prohibition of the 1920s. In this period, illegal consumption of alcohol "acquired the frisson of the forbidden" (Letcher,

2007, p. 82), and the trade of spirits became the purview of criminal gangs. Although the policy of alcohol prohibition was abandoned after a time, the discourse of prohibition grew, shaping understandings of other psychoactive substances, and eventually becoming the predominant discourse drawn on in constructing (illegal) drugs (Letcher, 2007; Taylor, 2016).

The prohibitionist discourse rests on a nexus of beliefs about the relationship between particular substances and society. At the centre of this nexus is the assertion that whatever substance is at a particular time considered to be an illicit drug holds no value to society (Taylor, 2016). As a result, institutional power and media attention is directed toward the multitude of social problems that are said to be precipitated by such substances -- mental and physical illness, crime, and the moral depreciation of society -- which are then controlled through policing and medical treatment (Herschinger, 2010; Taylor et al., 2016).

The magnitude and severity of the ills purportedly caused by drugs paves the way for the third assertion: that *any* use of such substances is unavoidably dangerous (the conflation of use with abuse) (Herschinger, 2010). It follows that any individuals who choose to consume these substances are at the very least “recklessly endangering” (Letcher, 2007, p. 80) their health and safety, and that of those around them. This construction of illegal substances is summed up by Taylor et al. (2016) in their discussion on drug policy: “The dominant prohibitionist discourse on ‘drugs’ then takes place within a framework preoccupied by compulsion, pain and pathology, in which drug use is presented as an activity undertaken by a small group of risk bearing ‘outsiders’, that inevitably leads to desperation and addiction” (p. 5).

Though not the only discourse at play in constructions about illegal drugs, the prohibitionist discourse is societally dominant, and as such is the discourse “about which all others... must orientate themselves (Letcher, 2007, p. 82). Despite the content of this survey being *psychedelic* drugs in particular rather than illegal drugs in general, the prohibitionist discourse featured prominently; indeed, a key aspect of the prohibitionist discourse is a blanketing effect whereby (almost) all drugs are treated with the same apprehension (Taylor, 2016).

Addiction and Abuse. Many participants readily drew on a prohibitionist discourse in conflating psychedelic use with abuse and addiction. This was particularly in relation to recreational use; various participants seemed to have different sets of beliefs around recreational compared to therapeutic contexts -- a dynamic that will be discussed in detail

later on. When expressing why they were not in support of legalisation of psychedelics for personal use, one participant simply stated “I do not support abuse”. Another expressed the certainty that in this context psychedelics “will be abused and cause more psychosocial issues”. The sense of inevitability around psychedelic use leading to addiction seemed to be a primary concern for numerous participants.

When asked whether psychedelics should be legal for personal use, one participant disagreed and explained simply, “Dangerous. Potential for abuse and addiction.” Another expressed the belief that psychedelics are “addictive in nature and may contribute to long term psychological disorders”. Many others expressed similar views, seemingly drawing on a reductionist discourse by branding any psychedelic with the label of ‘just another drug’ that inevitably causes addiction and mental illness. Furthermore, one participant described a situation of potential addiction to psychedelic substances wherein “people retreat from real world lives and solutions into a world of easy feelings and easy dopamine reward processes”. It is unusual for psychedelic experiences in particular to be described in the language of ‘ease’; this underscores the conflation of psychedelics with other prohibited substances that are often described in this way. One participant expressed an understanding of the reductionism at work in this framing of psychedelics, stating (with reference to addiction) that “psychedelics have a bad reputation as they are grouped with all other substances”.

Inducing Madness. A common concern drawn from responses to various questions was that psychedelics could trigger psychosis. In fact, some respondents incorporated this into their definition when asked to describe psychedelic substances, stating that these are “substances that... induce a form of psychosis”, or “mind-altering recreational drugs that cause psychosis/hallucinations/ changes in consciousness”. Some raised the issue of psychosis when describing experiences with patients: “I have seen a few patients with substance induced psychoses after psychedelic trips”, and “[patients with] drug-induced psychosis and schizophrenia”.

In constructing psychedelics as substances that cause psychosis, participants seemed to draw on the discourse of ‘psychedelics as pathological’ which, contemporarily, operates within the larger discourse of prohibition. According to Letcher (2007), the discourse of pathology around psychedelic substances originates in 1700s and 1800s with psilocybin mushrooms. At the time in various Western societies, mushrooms were generally understood to be delineated into either poisonous or edible varieties. As such, the psychedelic effects of

psilocybin mushrooms were assumed to be poisonings, and treated as any other poison would be (with stomach pumps, emetics and sometimes leeches). This conceptualisation of psychedelic effects as poisonings was cemented into biomedical understanding in the early 1900s by William Ford, an American pharmacologist who delineated this particular type of mushroom ‘poisoning’ from others and included it as a distinct entity in medical textbooks (Letcher, 2007).

This discourse later evolved into psychedelics as being substances that cause psychosis. The hallucinations caused by psychedelics were classified as having the same underlying cause as psychosis by Prussian pharmacologist Louis Lewin (Lewin, 1924). This marked the first time that drug-induced hallucinations were conceptualised as having a neurological basis, and thought to originate from aberrations in normal brain functioning. This trend of conflating effects of psychedelic substances with psychosis grew into the 1960s and 70s, which saw concerns about LSD causing profound changes in mental experience and functioning being popularised. The discourse of pathology centres, then, around constructions of normalcy, and framing the effects of psychedelic substances as deviations from normalcy which, along with the agents who choose to consume them, are to be feared. Letcher (2007) traces the origin of various terms previously and currently used to describe psychedelics, and illustrates how these encapsulate and maintain a discourse of pathology. Such substances have been called ‘psychomimetics’ (things that simulate psychosis), ‘hallucinogens’ (things that cause hallucinations), ‘intoxicants’ (things that poison), and ‘schizogens’ (things that cause schizophrenia). This language is peppered throughout the current dataset. When asked to define psychedelic substances, the majority participants seemed to construct their understanding in the language of hallucinations, aberrations from normalcy (“distortion”, “altered states”, “discrepant from existing reality”, “mind altering”, “a shift in the mind”), or psychosis, or some combination thereof.

Not only does constructing psychedelics in this way imbue these substances with inherent danger, but this also has the effect of branding any person who chooses to consume psychedelics as necessarily “recklessly endangering their mental health” (Letcher, 2007, p. 80). The consumer of psychedelics is understood to be flippantly choosing to gamble with their psychological wellbeing in pursuit of a ‘high’. In talking about their experience with patients who reported psychedelic use, one participant expressed: “I have had a few patients who have used substances recreationally - these have tended to be patients who are either risk takers or perhaps have more borderline personality dynamics”. This participant seems to

draw on a pathology discourse in framing consumption of psychedelics as an activity reserved for the reckless. However, they also seem to be reversing the ‘madness’ causation here -- proposing that those with existing mental illness may be more likely to consume psychedelics.

Other participants framed the deviation from normalcy as something to be disregarded, in the same way ravings of someone in the throes of psychosis are nonsensical deviations to be ignored. For instance, in describing professional experience with patients who reported psychedelic use (perhaps here interpreted to mean experiences with patients who were at the time experiencing the effects of psychedelics): “they basically talk in circles that only mean something to them...when substance not in system they often have no idea what they meant!”

It is likely this psychedelics-as-pathology discourse that participants draw on when describing, as one participant did, the recent ‘psychedelic renaissance’ as “irresponsible and unethical”. It is easy to see, then, how the discourse of pathology here, in its alarmist insistence on psychedelics as conjurers of madness, functions within and is essential -- and foundational -- to the maintenance of the prohibitionist discourse.

Psychedelics as Revealing the Hidden

Another common theme was participants constructing psychedelics as substances that are used to reveal the hidden. This theme was less prevalent than endangerment, but appeared in a considerable number of responses, around a quarter in total, and appeared more in response to questions around psychedelics in a therapeutic context or as a therapeutic tool, and prominently in definitions of ‘psychedelic therapy’. This theme was often embedded in a psychodynamic or psychoanalytic framework, wherein many participants expressed the value of psychedelics as helping to access hidden parts of the self: “From personal experience, [psychedelics] can provide fascinating material for psychodynamic interpretation.” Psychedelic use in explicitly therapeutic contexts was similarly described as an experience wherein an “altered state of consciousness is induced to aid the patients access to unconscious material”. Indeed, a psychodynamic modality was assumed by some participants to be the primary modality of psychedelic-assisted therapy; for instance: “From personal experience, material from your trips can be fascinating and revealing in a therapy context. *Even* if the therapist were not psychodynamic” (emphasis added).

Many participants also constructed psychedelics as a way to access some unseen forces of existence, using language relating to mysticism and spirituality: “To me the real value of psychedelic experiences lies in their ability to put us in touch with the realm of the unknown and chaotic, where all kinds of possibilities arise. Although I am not religious, this to me is the realm of the spiritual”.

Psychoanalysis. Various participants seemed to understand the purpose of psychedelic experiences as a way to access the unconscious, repressed memories, and in general terms, hidden parts of the psyche. Many described therapeutic use of psychedelics in this way, for instance as: “Therapy where a psychedelic is used as a catalyst to access various suppressed emotions or memories”. Some also used this language when describing patients who reported psychedelic use. For instance, “they reported a deeper connection with themselves, many subconscious ideas/facts/troubles became clear in their conscious”. One participant also expressed concern for this unearthing of unconscious material, stating: “I also think that repression of traumatic material is functional to a degree for individuals and that if one is going to use a substance to 'liberate' such material, in my terms one needs to think about the 'ego strength' of the patient and whether post the session they have capacity to integrate what has emerged”.

The framing of psychedelics functioning as a way to access hidden parts of the self also hinges on aberrations from normalcy, although in this instance such deviations are usually branded as positive, as possessing the potential to treat psychological ailments. This way of understanding psychedelics seems to draw on what Letcher (2007) terms a ‘psychological discourse’, wherein psychedelic-induced temporary alterations in the psyche are seen to manifest into consciousness what is usually hidden: repressed memories, unconscious desires and the like. Participants drew parallels between the psychedelic experience and dream states; here psychedelics are seen to “open up a motorway into the unconscious” (Letcher, 2007, p. 80). Many participants in the present sample seemed to construct psychedelics and PAT in this way, with numerous references to these substances enabling the accessing of “repressed” or “suppressed” memories, and “exploring the unconscious mind”, sometimes by “bypass[ing] the mental repression barrier”, “lowering defences” or “deconstructing the ego.”

The framing of psychedelics in this way has a history dating at least as far back as the synthesis of LSD in the 1940s. After the accidental creation of the substance by Swiss

chemist Albert Hoffman, LSD was originally marketed for this very purpose, and therapy using psychedelic substances, and within a psychoanalytic modality, became popularised as a treatment for various ailments (Swanson, 2018). Letcher (2007) identifies key terms relating to this discourse, including understanding such substances as ‘psychoactive’ (something that activates the mind); ‘psychotropic’ (turning the mind), and even the term used in the present study, ‘psychedelic’ (something that is mind-manifesting).

By employing this discourse, mental health care providers were in Hoffman’s time, and are increasingly, in the present moment of the ‘psychedelic renaissance’, able to legitimise psychedelic substances by locating them in the particular context of the therapy session (Swanson, 2018). This assumes a restrained handling of such substances that involves a high level of institutional control, whereby the substance (construed here as medicine), the environment it is consumed in (the professional space of a therapy session) and the consumer (here, the patient) are carefully governed. This allows therapists to legitimise the use of psychedelics as medicinal facilitators of therapy, and circumvent the issues of psychedelics-as-pathology that would otherwise characterise the use of such substances. This way of constructing psychedelics was frequently used in the current sample, wherein participants qualified statements of support for psychedelic use with terms such as “monitoring”, “control”, “supervision”, “contained”, “clinical environment”, “strict conditions”, and “qualified therapist”. For example, “Under *strict well researched conditions* [psychedelics] should be available *for clinician use if indicated*” (emphasis added), and “[psychedelics] are potentially of use for *therapeutic purposes* for some *carefully-screened* people”, and “*if very closely monitored*, [therapeutic use] is the way to go”

In this way, the discourse of psychedelics as tools for psychological (or more aptly here, the psychoanalytic) treatment, rather than representing a resistive discourse, serves to maintain the dominant discourse of prohibition: by specifying very particular contexts of use that are socially sanctioned, all other contexts of use, and especially those that do not involve institutionalised supervision or governance, remain restricted and stigmatised. As such, the discourse surrounding psychedelics as tools for psychoanalytic healing is at all times subject to the dominant discourse of prohibition.

Shamanism, Mysticism and Spirituality. Frequently, participants also constructed psychedelics as being in some way conduits to the spiritual, either by alluding to psychedelics

enabling spiritual experiences or journeys, or by describing people who use psychedelics as undergoing shamanic ‘training’ or acting as spiritual guides. This construction frames psychedelics as psychically beneficial due to their ability to enable or facilitate access to usually unseen forces, entities or realms. This was evident in instances where psychedelics were understood as, “Substances which produce... profound dream-like or spiritual experiences”, and in participants recalling that as a result of their own psychedelic use, they “gained insights on a spiritual level”.

Many participants also reported use by friends or patients that was constructed in this way: “Patients have described personally and spiritually transformative experiences through the use of psychedelics”, and “Many close personal and professional acquaintances have reported profoundly beneficial experiences with psychedelics, including... spiritual connection”. However, some participants were careful to underscore the importance of this use being infrequent: “Some of my friends make use of it as part of their spiritual practices *from time to time*” (emphasis added); “Clients who are wanting to deepen their spiritual experiences through *occasional* psychedelic use”.

Such constructions can be described as employing a discourse of psychedelics as ‘entheogens’. This term, a neologism meaning to occasion a state of consciousness involving being “filled, possessed or inspired” by a divine entity (Hanegraaff, 2013, p. 392), has been popularised as an alternative convention to the term ‘psychedelic’. The term was coined in an explicit attempt to categorise a form of psychedelic use as distinct from recreational use and its associations to hedonistic recklessness (Hanegraaff, 2013); as the original creator of the term put it, it was deemed necessary to find a term that was “unvulgarized by hippy abuse” (Wasson, 1980, p.15). The discourse that grew around this term centred on staking a claim for psychedelics as substances that do not bring about disease, and are not dangerous (when used in particular contexts), and instead have some inherent sacramental or spiritual value. In this way, psychedelics and the people who consume them were distanced from both the prohibition discourse and the pathological discourse.

As Letcher (2007) puts it, constructing such substances as entheogens “challenges us to reclassify mushrooms [and other psychedelics] and people who use them, and to regard both seriously” (p.85). Clear indications of this understanding of psychedelics were alluded to by some participants. For example, in defining psychedelic substances, one participant stated: “It is easier to say what they are not. They are not psychotropics and they are not

hallucinogens. They alter a sense of self in that they allow "mystical experiences"". It is clear from this statement that there is a desire to distance this form of psychedelic use from both the psychological discourse ("not psychotropics") and the pathological discourse ("not hallucinogens").

Another participant clearly constructed psychedelics used in a spiritual context as facilitating growth and self-improvement, in direct contrast to recreational use, which was constructed, by drawing on the pathological discourse, as dangerous and illegitimate: "Some [who use psychedelics] are insightful and use for their own spiritual journeys and some abuse for recreational/escaping purposes".

The framing of spiritual consumption as "use" and recreational consumption as *necessarily* "abuse" shows a clear insistence on the need to affirm and maintain the discourse of psychedelics-as-entheogens in order to legitimise their place in society. In this way, similarly to the previous example of use in psychotherapy, the discourse of psychedelics-as-entheogens is also subject to the dominant discourse of prohibition. Rather than resisting it, such constructions function -- and, in this case, were created with the express purpose of functioning -- *within* the dominant discourse of prohibition.

Psychedelics as a Question of Freedom and Personal Choice

It is clear from the discussion thus far that the dominant discourse of prohibition, and within this, the discourses of pathology and medicalisation, proliferated throughout the dataset. However, there was an indication of another discourse being drawn on by a number of participants, particularly in relation to questions around the legality of psychedelic substances. These participants seemed to construct psychedelic use as a matter of personal choice and individual freedom, drawing on a discourse of liberalism. This is perhaps best encapsulated by one participant's response in particular: "As consenting adults and responsible human beings with freedom of choice, we should be allowed to choose what drugs we are taking!"

This discourse was evidenced in various other instances, with language that centred around free will, human rights and individual choice. For instance, participants asserted that: "It is a fundamental right for all humans to alter their consciousness (a favourite past time)"; "We... have a right to make our own choices based on the available information"; "I believe

in freedom of choice, despite the risks”; and “I believe in free will”. A liberal position was also sometimes explicitly stated: “I am more liberal rather than paternalistic and believe everyone should make their own choices”.

Though contemporary discourses on liberalism are multiple and multifaceted, their origins are usually attributed to the ideas of 19th century philosopher John Stuart Mill in his essay, *On Liberty* (1859). Participants constructed the issue of legality in a way that aligned with Mill’s fundamental concept of liberty. The central claim made by Mill (1859), pertinent to this discussion, is that where an individual does not cause harm to others, they should be afforded the freedom to pursue their own interests; he asserts the ultimate importance of individual freedom and choice for a functioning society. On the freedom of choice in relation to ‘tastes’ (as drug use could be interpreted), Mill states:

“The principle [of human liberty] requires liberty of tastes and pursuits; of framing the plan of our life to suit our own character; of doing as we like, subject to such consequences as may follow: without impediment from our fellow creatures, so long as what we do does not harm them, even though they should think our conduct foolish, perverse, or wrong.” (p. 16)

In drawing on this discourse, participants relocated the crux of the argument away from legitimising the use of psychedelics by *increasing safety* (as when drawing on a psychological discourse), and toward legitimising the use of psychedelics by asserting that control over such behaviour is inherently unjust. As such, the argument was reframed in such a way that support for legality and access to psychedelics was not dependent on reducing risk through permitting controlled use in particular settings, or with a particular spiritual intention or mystical experiential content, but on asserting the importance of free choice. Indeed, in response to whether psychedelics were safe for recreational use, one participant stated, “The problem here is not that they are "not safe" but rather the idea that everything should be "safe".”

The way this discourse of liberalism interacts with the prohibitionist discourse warrants attention. The prohibitionist discourse holds that psychedelics (and other illegal drugs) offer no value to society. The discourse of liberalism resists this notion by implying that the act of consuming psychedelics does hold value; for one participant this value was described as “altering... consciousness (a favourite past time)”. Further, the prohibitionist discourse asserts that illegal drugs inevitably cause addiction and madness, and as such should be controlled through institutions of state control (primarily policing and medical

treatment). The liberal discourse does not seem to directly oppose this first assertion, that drugs cause addiction and madness (for instance, participants supported freedom of choice “despite the risks”), but rather takes issue with the conclusion that the use of such substances should be restricted through state control. In this way, the liberal discourse resists a part of the prohibitionist discourse, but not the pathological discourse that underpins it.

3.7 Answering the Research Questions

The following section attempts to integrate the findings of the qualitative and quantitative analyses, and provide a holistic portrayal of the results of this study within the broader research context. Despite some necessary repetition of the discussion points above, this section of the discussion answers the research questions posed by this study. Thus, the section has been structured according to the quantitative research questions as originally stated, and is interspersed with insights from the qualitative data.

The present study included a sample of 137 participants, most of whom were female, white, English-speaking and psychologists. Most had relatively liberal political views as measured by the Social and Economic Conservatism Scale (SECS), and a slight majority had some religious or spiritual affiliation. The vast majority of participants had heard of PAT, largely from friends and family or academic sources. All respondents had heard of at least one psychedelic, and most had heard of many of the most common psychedelics. Most participants reported having heard of psychedelic substances being used safely by healthy individuals, and approximately half of respondents reported exposure to a negative experience related to substance use (not necessarily use of psychedelics), either involving themselves or a friend or family member.

Despite the vast majority of respondents having had professional experience with patients who reported using psychedelics, almost half had received no formal training about psychedelics, and another third had very little formal training. Moreover, professional training was the least or nearly the least common majority information source for participants’ knowledge about all PLSs (except ketamine), and neither academic sources nor professional training constituted the main source of information for participants for any PLS (again with the exception of ketamine, perhaps owing to its conventional use in other medical settings). This indicates that there is a combination of high levels of exposure to psychedelics in participants’ daily practice, and low levels of technical knowledge about these substances.

The implications of this for how MHCPs navigate patients' use of psychedelics in their practice are unclear. This could be an important avenue of inquiry because of the potential interactions between psychedelics and existing mental health challenges of those who consume them. However, this could also be important for another reason, which relates to a common concern that arose among participants in the open-ended responses to some items. Many participants, describing patients' psychedelic use, expressed concerns about their own naivety with regard to these substances. For example, one participant stated: "I have felt uninformed and naive and have felt the need to go and research drugs and their effects after the sessions". Others described experiences of patients expressing interest in therapeutic psychedelics use, and wanting effects of psychedelics or therapeutic use explained to them. This gives an indication that this lack of knowledge may have consequences for the professional practice of MHCPs, given that many patients do seem to use these substances, wish to describe or gain insight into their experiences, and explore this mode of therapy.

In this sample, lifetime use of psychedelic-like substances varied depending on the substance, with few participants having used less common PLSs such as DMT or Ayahuasca, and almost a third of participants reporting use of psilocybin mushrooms and MDMA. This represents a substantially higher rate of PLS use than has been reported in the general population of South Africa, though data is scarce (Peltzer, K., & Phaswana-Mafuya, N. (2018). Lifetime use of alcohol, tobacco, cannabis and various other substances was also much higher in this sample compared to estimates in the general population (Ven Heerden et al., 2009), which might be reflective of more experimentation in university (Pérez-Pazos et al., 2015). However, this could also signal selection bias, such that mental health care providers (MHCPs) who have used psychedelics or other substances were more likely to complete the survey than the general population of MHCPs. However, the general rate of psychedelic and other substance use in the South African MHCP population has not been estimated, meaning the current sample's potential deviation from this is unknown. However, given the non-random sampling procedures used to recruit participants, the possibility that sampling bias could have influenced the results in some way should be considered.

How positive or negative are participants' attitudes towards psychedelic substances and PAT, overall and in different domains?

For many of the (Likert-type) items assessing attitudes to psychedelics and PAT, participants expressed optimism and support, particularly where items assessed general attitudes to psychedelics and PAT rather than attitudes specific to disorders or severe symptoms.

However, large proportions of participants selected 'Neutral/I Don't Know' responses for many items assessing both general and disorder-specific attitudes. This pattern could further underscore the low levels of knowledge participants had about psychedelics from formal training, but could also indicate ambivalence of attitudes towards psychedelics and PAT. This was frequently expressed in the open-ended responses. For instance, one participant described the effects of psychedelics as "Mixed experience from pos[itive] to extremely negative and dangerous"; many other participants expressed similar views. This ambivalence could in part be attributed to the broadness of the items used, a limitation of the questionnaire method of data collection. Many participants expressed that it was difficult to answer some items in a generalised way; for instance, whether psychedelics 'are safe for recreational use' depended for some on which psychedelics, being used by whom and in what way. This also partly speaks to the nature of psychedelic experiences, which are so dependent on what has been described as 'set' (the mindset of the user) and 'setting' (the physical environment where the experience takes place), that it can be challenging to provide generalised responses (Hartogsohn, 2017).

Despite the proliferation of neutral responses, various general patterns were observed. Overall, participants were less favourable to psychedelic use in recreational contexts, compared to use under medical supervision or with an explicit spiritual purpose. Due to the lack of data around attitudes to psychedelics, it is difficult to theorise the possible explanations for this. However, an examination of discourses drawn on in the qualitative data elucidates these contradictory responses. Use of psychedelics was frequently framed in a similar way in the qualitative responses, as legitimate under medical supervision or in spiritual contexts, but illicit in recreational settings. Around the world today, psychedelic use is generally framed within a dominant discourse of reductionist prohibition, which holds that these and other illegal substances contain no inherent value, and will inevitably lead to some danger (in this case, psychosis or addiction) (Taylor, et al., 2016). Medicalising psychedelics

allows these substances to stake a claim to a legitimate, less stigmatised position in modern society, and condones their use, though only under very strict constraints (here, in controlled medical contexts supervised by trained professionals) (Letcher, 2007). Similarly, framing psychedelics as tools to access a spiritual or mystical realm imbues them with a particular purpose that legitimises their use in society, but only in contexts of genuine spiritual intention, as a kind of sacrament. Under this discourse, then, recreational use remains stigmatised, prohibited and socially deviant. This may explain why participants expressed such contradictory views towards recreational and medical or spiritual use in both qualitative and quantitative responses.

A related pattern observed in the quantitative data was that on the whole, participants were more optimistic about the potential treatment benefits of PLS use in contexts of general emotional distress, and gave more ‘Neutral/I Don’t Know’ and negative responses to items relating to contexts of specific mental illness or severe symptoms. For instance, in relation to whether psychedelic use increased the risk of or worsened existing mood disorders as well as suicidality, participants were either more neutral (in the case of suicidality) or less favourable (in the case of mood disorders) compared to when asked about general emotional distress such as ‘anxiety’ and ‘depression’, wherein participants had more optimistic attitudes. Moreover, participants on the whole believed PLS use would worsen or trigger psychotic disorders. This is despite substantial evidence supporting the low risk of psychedelics in triggering or worsening suicidality and mental illness, including psychotic disorders, in recreational and clinical contexts (Chi & Gold, 2020; Hendricks et al., 2015). It seems unlikely, then, that scientific research is the basis for these beliefs. The role of the prohibitionist discourse in shaping these responses is similarly relevant here. The dominance of this discourse in modern society often means that fears around psychedelics and other drugs lack a scientific basis (Taylor et al., 2016). However, it is also relevant that the current sample comprises mental health care providers, the vast majority of whom have had professional experience with patients who reported psychedelic use, and for the most part have had little professional training or exposure to academic information about psychedelics. It can be presumed that much of their exposure to psychedelics, then, stems from experience with individuals already suffering from mental illness. Consequently, it is reasonable to assume that their views on psychedelics in relation to mental illness are coloured by this exposure -- despite the fact that most participants have also heard of safe psychedelic use.

How do participants' sociodemographic characteristics, beliefs, knowledge of psychedelics and PAT, and personal substance use relate to their overall attitudes towards psychedelic substances and PAT?

For these analyses, based on item clustering (see Factor Analysis), attitudes were separated into two components: general attitudes towards psychedelics (including safety, legality, therapeutic benefit for general emotional distress) and disorder-specific attitudes (including impact on particular mental disorders and severe symptoms thereof, such as suicidality). As such, two regression analyses were conducted to determine the associations between participant characteristics and attitudes to psychedelics and PAT.

Results of the first regression analysis indicated that over and above demographic and occupational characteristics, religious and political beliefs, and other knowledge variables, two variables were significantly associated with general attitudes. These included participants' use of psychedelics (but not other substances), as well as how many PLSs participants had heard of.

That only these variables were predictive of general attitudes is striking for this study, but also as a comparison to previous literature. As previously discussed, a recent survey of psychiatrists in the US (Barnett et al., 2018) found a range of associations between attitudes to psychedelics and demographics, occupation variables and knowledge. The present regression results provide contextualization of Barnett et al.'s (2018) findings, showing that here too, (male) gender and (younger) age are significant predictors of attitudes, but only up to the point that the influence of knowledge variables and drug use are considered. As discussed above, since male gender is frequently associated with higher drug use (McHugh et al., 2018), it is possible that this underlies the association between gender and attitudes, both in the present sample and in Barnett's (2018) study. However, again, there are various potential confounds in this association, and it would be premature to posit any conclusions in this regard before further research is conducted. The causation could also run in the reverse, with participants who already hold more positive views about the safety and treatment potential of psychedelics seeking these substances out. Though presumably, if this is the direction of causation, participants' experiences of psychedelics did not then result in their views becoming negative overall after this use.

The other significant predictor of general attitudes, the number of PLSs participants had heard of, is an indication of their level of knowledge around psychedelics in general, and

could relate to their own PLS use; perhaps participants who have heard of many PLSs have had more exposure to recent studies or possibly also had personal experience using PLSs, and this might explain their more positive attitudes. Previous research has not investigated this association. It is also possible, however, that participants who have positive attitudes towards psychedelics and PAT are compelled to learn more about these substances and so become aware of different psychedelics. Future studies on attitudes and psychedelics should take this into account.

Results of the second regression analysis indicated that over and above demographic and occupational characteristics, religious and political beliefs, and other knowledge variables, only one variable was a significant predictor of disorder-specific attitudes, namely, that participants who reported exposure to a negative experience relating to any substance use (first-hand exposure or that of friends or family) had significantly less favourable disorder-specific attitudes. This can be explained by returning to the reductionist prohibition discourse that was present in much of the quantitative and qualitative responses. As alluded to previously, a key aspect of this discourse involves reducing all ‘drugs’ to a singular category labelled as dangerous and offering nothing of value to society in general (Taylor et al., 2016). As such, attitudes formed from negative experiences participants may have had with other substances are likely to carry over into attitudes towards psychedelics. Further, the negative experiences participants reported that were related to psychedelics are all the more straightforward in interpretation -- negative experiences with a substance could surely lead to generalised negative attitudes regarding that and related substances. It is interesting, however, that these negative attitudes relate to the disorder-specific component of attitudes, and not the general attitudes component.

However, the disorder-specific component contains many items relating to *risk* and *worsening* of disorders, and contains more negatively-valenced items overall, whereas the general attitudes component contains more positively-valenced items, and items relating to psychedelic use in the average individual. It may be, then, that participants who have had exposure to negative experiences are more sensitive to items relating to risk from drug use, and the dangers of drug use, and so are more likely to express negative attitudes in relation to these items, as compared with general questions and those that are more positively-valenced (for instance, ‘useful for self-exploration’ or ‘safe for religious use’).

Taken together, these results seem to suggest that participants' attitudes are, in the absence of formal training and academic information sources, based largely on personal experience with drugs and on exposure to negative experiences with drugs, which is informed by the prohibitionist discourse that predominates constructions of psychedelics and other illegal substances in modern society.

How do participants' sociodemographic characteristics, beliefs, knowledge of psychedelics and PAT, and personal substance use relate to their attitudes towards psychedelic substances and PAT at the level of individual attitude items?

In order to more closely examine attitudes towards psychedelics and PAT, chi-square analyses were conducted to determine whether any participant characteristics were associated with responses to individual attitude items. Various significant associations were found. In general, male gender, white race, and being a psychologist were associated with more favourable attitudes on some items. Male gender is likely associated with more positive attitudes due to the previously discussed association. With regard to race and occupation, the explanations for these associations are as yet unclear, and warrant attention in future research.

Another pattern of associations found relates to participant beliefs. Not being affiliated with a religion or spirituality was associated with more favourable attitudes for some items, with one particularly relating to recreational (personal) use. Lower levels of support for concepts of 'patriotism' and the 'military/national security' were also associated with more favourable attitudes for an item relating to recreational use. There is an established link between lack of religious affiliation and general liberalism (Eagleton, 2009; LeDrew, 2012), which here could also account for a desire for psychedelic use to be free of state control and regulation (a liberal principle). Indeed, key principles of liberalism featured prominently in much of the qualitative data, particularly surrounding questions of legality for recreational use. Participants used language centring around free will, human rights and individual choice in framing their opinions about the legality of psychedelics. They emphasised the importance of freedom of choice in deciding whether or not to use psychedelics. Reservations about concepts of the military, national security, and patriotism could also be seen as central to liberalism in the classical sense that limitations on state power are valued within discourses of liberalism. However, this association is speculative, and this conclusion cannot be drawn from the present results alone.

Other patterns found in the data relate to knowledge variables and attitudes. More recent attainment of highest qualification was associated with more favourable attitudes on some items. This could be explained by age, with younger participants, having attained their qualifications more recently, being more open to psychedelics. For instance, Barnett et al. (2018) found that younger psychiatrists and trainees held more favourable attitudes to psychedelics. However, the authors concluded that this association was more likely to be explained by younger participants being exposed to more positive information about psychedelics in scientific literature, and conversely having less exposure in the past to negative news coverage or negative direct or indirect experience with psychedelics. It seems plausible that in the present sample, those with qualifications obtained from 2010 onwards have been more exposed to the boom in psychedelic research in the last decade (research that underscores the safety of PLS use and the low level of risk posed for mental illnesses in general), and so have more favourable attitudes in these areas. This line of reasoning is also supported by the finding that respondents being moderately up to date with scientific developments in their profession was associated with lower agreement that psychedelics are unsafe for recreational use. The explanation for favourable views being linked to the notion that those with fewer years of professional experience might have had less direct or indirect exposure to psychedelics, seemed to be contradicted by the finding in this study that professional experience with patients who reported psychedelic use was, in fact, associated with favourable attitudes towards psychedelics in a therapeutic context. Importantly, this supports the idea that participants may rely on indirect experience in forming their attitudes towards psychedelics. This is further supported by the finding that participants having heard of individuals using psychedelics safely was associated with more favourable attitudes for the vast majority of items. This underscores that participants likely rely on indirect experience such as this in forming attitudes towards psychedelics and PAT. This is especially understandable due to the limited formal and professional training participants reported receiving about psychedelics and PAT. It could also be argued, however, that those with more optimistic views about psychedelics and PAT seek out positive affirmation of these views in the form of stories of safe use of psychedelics.

Chapter 4: Conclusion, Implications & Limitations

There has been a resurgence of research, particularly in the last decade, into the potential of psychedelic and psychedelic-like substances in the treatment of various physical and psychological ailments. Promising results from this inquiry suggest that psychedelic-

assisted therapy (PAT) could become a part of the treatment regime for some mental illnesses in the near future. However, psychedelics remain illegal and heavily stigmatised in the majority of the world, including South Africa, and a prohibitionist discourse permeates throughout our society. It is vital that research investigates the perceptions of PAT among mental health care providers, who would eventually be charged with incorporating this therapy into their practice should it be legalised. The present study sought to begin this process of investigation, by surveying South African psychologists and psychiatrists using combined quantitative and qualitative approaches.

Overall, the results of this study indicate high levels of ambivalence among mental health care providers about the utility of psychedelics in therapy and in non-therapeutic contexts. Across the dataset, and even within the same responses, participants expressed optimism and scepticism around key questions of the legality, safety and effectiveness of psychedelic substances in medical and non-medical settings. Along with ambivalence, participants frequently expressed a lack of knowledge around various dimensions of psychedelics and PAT, and especially a lack of formal training. Thus, views appeared to be based largely on historically dominant prohibitionist discourses, which were in some instances challenged, and in other instances strengthened, by their personal direct and indirect experiences with psychedelics.

The vast majority of participants reported high levels of exposure to psychedelics in their professional practice, including with patients who reported experiences using psychedelics, and with patients who wanted to engage with the participants as their therapists about using psychedelics in a therapeutic context. Such findings suggest that the lack of knowledge among MHCPs could negatively impact their practice; this underscores the need for evidence-based formal training about psychedelics.

This investigation also found key differences in attitudes towards psychedelics that related to general safety, legality and use in contexts of general emotional distress, and attitudes that related to specific mental disorders and severe symptoms thereof. Over and above all surveyed demographic variables, religious and political beliefs, and various knowledge variables, it was found that participant psychedelic use as well as the number of psychedelics participants had heard of were predictive of more favourable general attitudes, but not disorder-specific attitudes. It is striking that these two variables should be significant when taking the influence of all other variables into account; further research is required to

explore this association more closely. In the context of disorder-specific attitudes, participant exposure to a negative experience related to any substance use was found to be predictive of less favourable disorder-specific attitudes, over and above all other variables. This association is equally tentative and requires further exploration.

It is clear that although compelling, the results of the present study alone are insufficient as a basis for formulating conclusions about the determinants of attitudes towards psychedelics and PAT. The study is limited by a number of factors. Relating to study design, since this research is correlational in nature, claims of causality cannot be established. As such, the associations found could be explained by other variables entirely, or the direction of association could be reversed. A further design limitation is that because some key terms were not defined for participants (for instance, what constitutes ‘Moderate’ as opposed to ‘Limited’ use of a substance), it is possible that participants had different interpretations of some of these terms. However, there were very few of these terms to select from, which may have mitigated this problem. Another potential limitation is that one consequence of using questionnaires to collect data is that the level of nuance that can be derived from the data is often restricted. For a topic that necessitates substantial scope for nuance, questionnaires could pose the problem of restricting this. However, the use of open-ended responses after key items was designed to limit this and allow for more complexity to be expressed.

This study is also limited by the possibility of sampling bias in the recruitment of participants. This is true for studies that do not employ random sampling methods, but especially in this case, where there are indications that the current sample is likely not representative of the population of MHCPs in key respects that could bias the results; for instance, a much higher level of substance use was found in the present sample than general population estimates suggest. This also relates to the limitation that this study, due to its purposive sampling, may not be generalisable to the larger population of psychologists and psychiatrists in South Africa, despite key demographic characteristics closely mirroring those of psychologists in the country. That the demographic makeup of MHCPs in South Africa is so demographically skewed also has implications for the effectiveness of psychotherapeutic interventions as a whole, and in particular for the potential utility of psychedelic-assisted therapy. This systemic issue goes hand in hand with the related obstacle of poor access to mental health care in South Africa, and optimism around the potential of PAT should be tempered by cognisance of this reality.

Despite these limitations, the present investigation has made some key contributions to the research on psychedelic substances. Firstly, this study is only the second study to investigate attitudes towards psychedelics among mental health care workers, and the first to do so in a comprehensive manner, using parametric tests and a wide range of variables, within a mixed-methods model. Moreover, this research is the first to meaningfully investigate psychedelic substances in the context of therapy in South Africa, an avenue that is underexplored and could have the potential to reimagine and integrate psychology and psychiatry in the global South. Finally, this investigation has shown that despite attitudes being dominated by a prohibitionist discourse, there is optimism about the future of psychedelics and psychedelic-assisted therapy among mental health care workers. This exploratory research paves the way for further studies to more fully investigate the associations between substance use, knowledge of psychedelics, negative drug experiences, and attitudes towards psychedelics and PAT. Future investigations could help to elucidate these associations, particularly by employing a study of this kind among a larger sample of MHCPs, and by using randomised sampling methods to ensure generalisability of results to the wider MHCP population. Such research could also benefit from using additional qualitative forms of data collection such as interviews or focus groups, to allow scope for more comprehensive debate to emerge around this intricate and contentious topic.

References

- Agin-Liebes, G. I., Malone, T., Yalch, M. M., Mennenga, S. E., Ponté, K. L., Guss, J., Bossis, A. P., Grigsby, J., Fischer, S., & Ross, S. (2020). Long-term follow-up of psilocybin-assisted psychotherapy for psychiatric and existential distress in patients with life-threatening cancer. *Journal of Psychopharmacology*, 34(2), 155-166.
<https://doi.org/10.1177/0269881119897615>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- American Psychological Association. (2002). Ethical principles of psychologists and code of conduct. *American psychologist*, 57(12), 1060–1073. <https://doi.org/10.1037/0003-066x.57.12.1060>
- Amoroso, T., & Workman, M. (2016). Treating posttraumatic stress disorder with MDMA-assisted psychotherapy: a preliminary meta-analysis and comparison to prolonged exposure therapy. *Journal of Psychopharmacology*, 30(7), 595-600.
<https://doi.org/10.1177/0269881116642542>
- Andersson, M., & Kjellgren, A. (2019). Twenty percent better with 20 micrograms? A qualitative study of psychedelic microdosing self-rapports and discussions on YouTube. *Harm reduction journal*, 16(1), 1-12.
- Bahji, A., Forsyth, A., Groll, D., & Hawken, E. R. (2019). Efficacy of 3, 4-methylenedioxymethamphetamine (MDMA)-assisted psychotherapy for posttraumatic stress disorder: A systematic review and meta-analysis. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 96, 109735.
<https://doi.org/10.1016/j.pnpbp.2019.109735>
- Barnett, B. S., Siu, W. O., & Pope, H. G., Jr. (2018). A Survey of American Psychiatrists' Attitudes Toward Classic Hallucinogens. *The Journal of nervous and mental disease*, 206(6), 476-480. <https://doi.org/10.1097/nmd.0000000000000828>
- Bartkowski, J. P., & Xu, X. (2007). Religiosity and teen drug use reconsidered: A social capital perspective. *American Journal of Preventive Medicine*, 32(6), 182-194.
<https://doi.org/10.1016/j.amepre.2007.03.001>

- Beckett, K. (1994). Setting the public agenda: “street crime” and drug use in American politics. *Social problems*, 41(3), 425-447.
<https://doi.org/10.1525/sp.1994.41.3.03x0447e>
- Berkovitch, L., Roméo, B., Karila, L., Gaillard, R., & Benyamina, A. (2021). Efficacy of psychedelics in psychiatry, a systematic review of the literature. *L'encephale*.
- Best, D., Rawaf, S., Rowley, J., Floyd, K., Manning, V., & Strang, J. (2000). Drinking and smoking as concurrent predictors of illicit drug use and positive drug attitudes in adolescents. *Drug and alcohol dependence*, 60(3), 319-321.
[https://doi.org/10.1016/s0376-8716\(00\)00113-7](https://doi.org/10.1016/s0376-8716(00)00113-7)
- Bishop, P. A., & Herron, R. L. (2015). Use and misuse of the Likert item responses and other ordinal measures. *International journal of exercise science*, 8(3), 297.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4833473/>
- Bracco, J. M. (2019). The United States Print Media and its War on Psychedelic Research in the 1960s. In *The Exposition* (Vol. 5). Buffalo, NY: Buffalo State College.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Brown, T. K. (2013). Ibogaine in the treatment of substance dependence. *Current drug abuse reviews*, 6(1), 3-16. <https://doi.org/10.2174/15672050113109990001>
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done?. *Qualitative research*, 6(1), 97-113. <https://doi.org/10.1177/1468794106058877>
- Carhart-Harris, R. L., & Goodwin, G. M. (2017). The therapeutic potential of psychedelic drugs: past, present, and future. *Neuropsychopharmacology*, 42(11), 2105.
<https://doi.org/10.1038/npp.2017.84>
- Carhart-Harris, R. L., Erritzoe, D., Haijen, E., Kaelen, M., & Watts, R. (2018). Psychedelics and connectedness. *Psychopharmacology*, 235(2), 547-550.
<https://doi.org/10.1007/s00213-017-4701-y>
- Carhart-Harris, R. L., Leech, R., Erritzoe, D., Williams, T. M., Stone, J. M., Evans, J., Sharp, D. J., Feilding, A., Wise, R. G., & Nutt, D. J. (2012). Functional connectivity measures after psilocybin inform a novel hypothesis of early psychosis. *Schizophrenia bulletin*, 39(6), 1343-1351. <https://doi.org/10.1093/schbul/sbs117>
- Carhart-Harris, R., Giribaldi, B., Watts, R., Baker-Jones, M., Murphy-Beiner, A., Murphy, R., ... & Nutt, D. J. (2021). Trial of Psilocybin versus Escitalopram for Depression. *New England Journal of Medicine*, 384(15), 1402-1411.

- Carifio, J., & Perla, R. (2007). Ten common misunderstandings, misconceptions, persistent myths and urban legends about Likert scales and Likert response formats and their antidotes. *Journal of the Social Sciences*, 3, 106-116.
<https://doi.org/10.3844/jssp.2007.106.116>
- Carifio, J., & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical education*, 42(12), 1150-1152. <https://doi.org/10.1111/j.1365-2923.2008.03172.x>
- Chi, T., & Gold, J. A. (2020). A review of emerging therapeutic potential of psychedelic drugs in the treatment of psychiatric illnesses. *Journal of the Neurological Sciences*, 411, 116715. <https://doi.org/10.1016/j.jns.2020.116715>
- Christie, S. (1998). Trial by media: Politics, policy and public opinion, the case of the ACT heroin trial. *Current Issues in Criminal Justice*, 10(1), 37-51.
<https://doi.org/10.1080/10345329.1998.12036112>
- Clason, D. L., & Dormody, T. J. (1994). Analyzing data measured by individual Likert-type items. *Journal of agricultural education*, 35(4), 4.
<https://doi.org/10.5032/jae.1994.04031>
- Coomber, R., Morris, C., & Dunn, L. (2000). How the media do drugs: Quality control and the reporting of drug issues in the UK print media. *International Journal of Drug Policy*, 11(3), 217-225. [https://doi.org/10.1016/s0955-3959\(00\)00046-3](https://doi.org/10.1016/s0955-3959(00)00046-3)
- Courtwright, D. T. (2004). The Controlled Substances Act: How a “big tent” reform became a punitive drug law. *Drug and Alcohol Dependence*, 76(1), 9-15.
<https://doi.org/10.1016/j.drugalcdep.2004.04.012>
- Creswell, J. W. (2012). Philosophical Assumptions and Interpretive Frameworks. In *Qualitative inquiry and research design: choosing among five approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W., & Plano Clark, V. L. (2007). Choosing a Mixed Methods Design. In *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: SAGE Publications
- Croft, R. J., Klugman, A., Baldeweg, T., & Gruzelier, J. H. (2001). Electrophysiological evidence of serotonergic impairment in long-term MDMA (“ecstasy”) users. *American Journal of Psychiatry*, 158(10), 1687-1692.
<https://doi.org/10.1176/appi.ajp.158.10.1687>

- Dahlberg, C. C., Mechaneck, R., & Feldstein, S. (1968). LSD research: The impact of lay publicity. *American Journal of Psychiatry*, 125(5), 685-689.
<https://doi.org/10.1176/ajp.125.5.685>
- Dos Santos, R. G., Osorio, F. L., Crippa, J. A. S., & Hallak, J. E. (2016). Classical hallucinogens and neuroimaging: A systematic review of human studies: Hallucinogens and neuroimaging. *Neuroscience & Biobehavioral Reviews*, 71, 715-728.
<https://doi.org/10.1016/j.neubiorev.2016.10.026>
- Dumont, G. J. H., & Verkes, R. J. (2006). A review of acute effects of 3, 4-methylenedioxymethamphetamine in healthy volunteers. *Journal of Psychopharmacology*, 20(2), 176-187. <https://doi.org/10.1177/0269881106063271>
- Durrheim, K., & Tredoux, C. (2013). *Numbers, hypotheses & conclusions: A course in statistics for the social sciences*. Johannesburg, South Africa: Juta and Company Ltd.
- Dyck, E. (2006). 'Hitting highs at rock bottom': LSD treatment for alcoholism, 1950–1970. *Social History of Medicine*, 19(2), 313-329. <https://doi.org/10.1093/shm/hkl039>
- Dyck, E. (2015). LSD: a new treatment emerging from the past. *CMAJ*, 187(14), 1079-1080.
<https://doi.org/10.1503/cmaj.141358>
- Eagleton, T. (2009). *Reason, faith, and revolution: Reflections on the God debate*. Yale University Press.
- Ellse, M. (n.d.). Psychedelic Guidance [Online blog post]. Retrieved from
<https://melissaellse.co.za/psychedelic-guidance/>
- El-Seedi, H. R., De Smet, P. A., Beck, O., Possnert, G., & Bruhn, J. G. (2005). Prehistoric peyote use: alkaloid analysis and radiocarbon dating of archaeological specimens of *Lophophora* from Texas. *Journal of ethnopharmacology*, 101(1-3), 238-242.
<https://doi.org/10.1016/j.jep.2005.04.022>
- Entman, R. M. (1993). Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Everett, J. A. (2013). The 12 item social and economic conservatism scale (SECS). *PloS one*, 8(12). <https://doi.org/10.1371/journal.pone.0082131>
- Feduccia, A. A., & Mithoefer, M. C. (2018). MDMA-assisted psychotherapy for PTSD: are memory reconsolidation and fear extinction underlying mechanisms?. *Progress in neuro-psychopharmacology and biological psychiatry*, 84, 221-228.
<https://doi.org/10.1016/j.pnpbp.2018.03.003>

- Fellingham, R., Dhali, A., Guidozzi, Y., & Gardner, J. (2012). The 'war on drugs' has failed: Is decriminalisation of drug use a solution to the problem in South Africa?. *South African Journal of Bioethics and Law*, 5(2), 78-82. <https://doi.org/10.7196/sajbl.219>
- Fernandez, J. W., & Fernandez, R. L. (2001). "Returning to the Path": The Use of Iboga [ine] in an Equatorial African Ritual Context and the Binding of Time, Space, and Social Relationships. In *Alkaloids: Chemistry and Biology* (Vol 56) (pp. 235-249). Cambridge, MA: Academic Press.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage: London
- Ford, J. A., & Hill, T. D. (2012). Religiosity and adolescent substance use: evidence from the national survey on drug use and health. *Substance Use & Misuse*, 47(7), 787-798. <https://doi.org/10.3109/10826084.2012.667489>
- Forrester, M. A., & Sullivan, C. (2018). *Doing qualitative research in psychology: A practical guide*. Thousand Oaks, CA: SAGE Publications.
- Frias, E. E. (2011). *Sending out Your Soul: An Entheogenic Forum Community Explored through Language* (Doctoral dissertation).
- Fuentes, J. J., Fonseca, F., Elices, M., Farre, M., & Torrens, M. (2019). Therapeutic use of LSD in psychiatry: A systematic review of randomized-controlled clinical trials. *Frontiers in Psychiatry*, 10, 943. <https://doi.org/10.3389/fpsy.2019.00943>
- Gelders, D., Patesson, R., Vandoninck, S., Steinberg, P., Van Malderen, S., Nicaise, P., De Ruyver, B., Pelc, I., Dutta, M. J., Roe, K., & Vander Laenen, F. (2009). The influence of warning messages on the public's perception of substance use: A theoretical framework. *Government Information Quarterly*, 26(2), 349-357. <https://doi.org/10.1016/j.giq.2008.11.006>
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational evaluation and policy analysis*, 11(3), 255-274. <https://doi.org/10.3102/01623737011003255>
- Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., Cosimano, M. P., & Klinedinst, M. A. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: A randomized double-blind trial. *Journal of psychopharmacology*, 30(12), 1181-1197. <https://doi.org/10.1177/0269881116675513>

- Grinspoon, L., & Bakalar, J. B. (1981). The psychedelic drug therapies. *Curr Psychiatr Ther*, 20, 275-283. https://doi.org/10.1007/978-1-4613-1485-1_3
- Guo, W., Liu, F., Zhang, J., Zhang, Z., Yu, L., Liu, J., Chen, H., & Xiao, C. (2014). Abnormal default-mode network homogeneity in first-episode, drug-naïve major depressive disorder. *PloS one*, 9(3), e91102. <https://doi.org/10.1371/journal.pone.0091102>
- Gwala, M. P. (2016). Mafika Gwala Collected Poems. *South African History Online*. (Original work published 1982). Retrieved from https://www.sahistory.org.za/sites/default/files/archive-files/mafika_gwala_poetry_book_2016
- Halpern, J. H., Pope, H. G., Jr., Sherwood, A. R., Barry, S., Hudson, J. I., & Yurgelun-Todd, D. (2004). Residual neuropsychological effects of illicit 3, 4-methylenedioxymethamphetamine (MDMA) in individuals with minimal exposure to other drugs. *Drug and alcohol dependence*, 75(2), 135-147. <https://doi.org/10.1016/j.drugalcdep.2004.02.008>
- Hanegraaff, W. J. (2013). Entheogenic esotericism. *Contemporary Esotericism*, 392-409.
- Hannaford, A. (2017). *Dying to get clean: is ibogaine the answer to heroin addiction?* (Online Article) The Observer. Retrieved from <https://www.theguardian.com/society/2017/dec/10/ibogaine-heroin-addiction-treatment-gabon-withdrawal-danger-death>
- Haridy, R. (2020, January 19). MDMA for PTSD granted expanded access by FDA, patient treatments begin. *New Atlas*. Retrieved from <https://newatlas.com/health-wellbeing/mdma-psychotherapy-ptsd-expanded-access-fda-maps/>
- Hartogsohn, I. (2017). Constructing drug effects: A history of set and setting. *Drug Science, Policy and Law*, 3, 2050324516683325.
- Health Professions Council of South Africa (2017). National survey of all registered psychology practitioners. http://psytalk.psyssa.com/wp-content/uploads/2017/08/HPCSA_Psychology_Survey_Report_FIN_320Feb202017.pdf
- Hendra, H. (2019). Rethinking Response Rates: New Evidence of Little Relationship Between Survey Response Rates and Nonresponse Bias. *Eval Rev*.

- Hendricks, P. S., Thorne, C. B., Clark, C. B., Coombs, D. W., & Johnson, M. W. (2015). Classic psychedelic use is associated with reduced psychological distress and suicidality in the United States adult population. *Journal of Psychopharmacology*, 29(3), 280-288.
- Hengartner, M. P., & Lehmann, S. N. (2017). Why psychiatric research must abandon traditional diagnostic classification and adopt a fully dimensional scope: two solutions to a persistent problem. *Frontiers in psychiatry*, 8, 101.
<https://doi.org/10.3389/fpsyt.2017.00101>
- Herschinger, E. (2010). Constructing global enemies: hegemony and identity in international discourses on terrorism and drug prohibition. Routledge Hill Book Company
- Hill, T. D., Burdette, A. M., Weiss, M. L., & Chitwood, D. D. (2009). Religious involvement and adolescent substance use. In *Adolescent substance abuse* (pp. 171-189). Springer, Boston, MA.
- Ho, U. (2019). Psychoactive drug a 'near miracle' therapy for SA addicts & trauma victims. Retrieved from <https://www.timeslive.co.za/sunday-times/lifestyle/2019-09-08-psychoactive-drug-a-near-miracle-therapy-for-addicts-trauma-victims/>
- Hofmann, A. (1980). LSD: my problem child. *Psychedelic Reflections*, 24.
<https://doi.org/10.1080/02646839908404585>
- Hughes, C., Spicer, B., Lancaster, K., Matthew-Simmons, F., & Dillon, P. (2010). Bulletin No. 20: Drugs in the Australian news media: Trends and impacts on youth attitudes to illicit drug use. DPMP Bulletin Series. Sydney: National Drug & Alcohol Research Centre. <http://unsworks.unsw.edu.au/fapi/datastream/unsworks:52818/bine6d8fdbf-e26e-4a1a-93e3-acf230ffa8d5?view=true>
- Jeynes, W. H. (2006). Adolescent religious commitment and their consumption of marijuana, cocaine, and alcohol. *Journal of health & social policy*, 21(4), 1-20.
https://doi.org/10.1300/j045v21n04_01
- Joubert, L. (2019). Magic medicine. *Medium*. Retrieved from <https://medium.com/letters-from-the-global-south/magic-medicine-9101ea44bcf6>
- Keeton, C. (2018, December 16). Psychedelic drugs have 'mind-blowing' potential to treat depression. *Sunday Times*. Retrieved from <https://www.timeslive.co.za/sunday-times/lifestyle/health-and-sex/2018-12-16-feeling-low-hippy-high-may-help/>

- Keichel, P. M. (2019, September 6). Let's change SA's mind on psychedelics. *Mail & Guardian*. Retrieved from <https://mg.co.za/article/2019-09-06-00-lets-change-sas-mind-on-psychedelics/>
- Kendler, K. S., Liu, X. Q., Gardner, C. O., McCullough, M. E., Larson, D., & Prescott, C. A. (2003). Dimensions of religiosity and their relationship to lifetime psychiatric and substance use disorders. *American journal of psychiatry*, 160(3), 496-503.
- Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, 330(6006), 932-932. <https://doi.org/10.1126/science.1192439>
- Kloren, S. (2017, August 27). The case to legalise magic mushrooms. *Independent Online*. Retrieved from <https://www.iol.co.za/lifestyle/health/mind/the-case-to-legalize-magic-mushrooms-10936671>
- Kuzenko, N., Sareen, J., Beesdo-Baum, K., Perkonig, A., Höfler, M., Simm, J., ... & Wittchen, H. U. (2011). Associations between use of cocaine, amphetamines, or psychedelics and psychotic symptoms in a community sample. *Acta psychiatrica scandinavica*, 123(6), 466-474.
- Kuzon, W., Urbanchek, M., & McCabe, S. (1996). The seven deadly sins of statistical analysis. *Annals of plastic surgery*, 37, 265-272. <https://doi.org/10.1097/00000637-199609000-00006>
- Lancaster, K., Hughes, C. E., Spicer, B., Matthew-Simmons, F., & Dillon, P. (2011). Illicit drugs and the media: Models of media effects for use in drug policy research. *Drug and Alcohol Review*, 30(4), 397-402. <https://doi.org/10.1111/j.1465-3362.2010.00239.x>
- Leary, T., Metzner, R., Presnell, M., Weil, G., Schwitzgebel, R., & Kinne, S. (1965). A new behavior change program using psilocybin. *Psychotherapy: Theory, Research & Practice*, 2(2), 61-72. <https://doi.org/10.1037/h0088612>
- LeDrew, S. (2012). The evolution of atheism: Scientific and humanistic approaches. *History of the Human Sciences*, 25(3), 70-87
- Lee, E. E., Della Selva, M. P., Liu, A., & Himelhoch, S. (2015). Ketamine as a novel treatment for major depressive disorder and bipolar depression: a systematic review and quantitative meta-analysis. *General hospital psychiatry*, 37(2), 178-184.
- Leptourgos, P., Fortier-Davy, M., Carhart-Harris, R., Corlett, P. R., Dupuis, D., Halberstadt, A. L., ... & Jardri, R. (2020). Hallucinations Under Psychedelics and in the

Schizophrenia Spectrum: An Interdisciplinary and Multiscale Comparison. *Schizophrenia Bulletin*, 46(6), 1396-1408.

Letcher, A. (2007). Mad thoughts on mushrooms: Discourse and power in the study of psychedelic consciousness. *Anthropology of Consciousness*, 18(2), 74-98.

Liester, M. (2014). A review of lysergic acid diethylamide (LSD) in the treatment of addictions: historical perspectives and future prospects. *Current drug abuse reviews*, 7(3), 146-156. <https://doi.org/10.2174/1874473708666150107120522>

Lilienfeld, S. O., Ritschel, L. A., Lynn, S. J., Cautin, R. L., & Latzman, R. D. (2013). Why many clinical psychologists are resistant to evidence-based practice: Root causes and constructive remedies. *Clinical psychology review*, 33(7), 883-900.

Litjens, R. P., Brunt, T. M., Alderliefste, G. J., & Westerink, R. H. (2014). Hallucinogen persisting perception disorder and the serotonergic system: a comprehensive review including new MDMA-related clinical cases. *European Neuropsychopharmacology*, 24(8), 1309-1323. <https://doi.org/10.1016/j.euroneuro.2014.05.008>

Longest, K. C., & Vaisey, S. (2008). Control or conviction: Religion and adolescent initiation of marijuana use. *Journal of Drug Issues*, 38(3), 689-715. <https://doi.org/10.1177/002204260803800303>

Ly, C., Greb, A. C., Cameron, L. P., Wong, J. M., Barragan, E. V., Wilson, P. C., Burbach, K. F., Zarandi, S. S., Sood, A., Paddy, M. R., & Duim, W. C. (2018). Psychedelics promote structural and functional neural plasticity. *Cell reports*, 23(11), 3170-3182. <https://doi.org/10.1016/j.celrep.2018.05.022>

Macbeth, D. (2001). On “reflexivity” in qualitative research: Two readings, and a third. *Qualitative inquiry*, 7(1), 35-68.

Majić, T., Schmidt, T. T., & Gallinat, J. (2015). Peak experiences and the afterglow phenomenon: when and how do therapeutic effects of hallucinogens depend on psychedelic experiences?. *Journal of Psychopharmacology*, 29(3), 241-253. <https://doi.org/10.1177/0269881114568040>

Marcantoni, W. S., Akoumba, B. S., Wassef, M., Mayrand, J., Lai, H., Richard-Devantoy, S., & Beauchamp, S. (2020). A systematic review and meta-analysis of the efficacy of intravenous ketamine infusion for treatment resistant depression: January 2009–January 2019. *Journal of Affective Disorders*.

- Maresh, E. L., Allen, J. P., & Coan, J. A. (2014). Increased default mode network activity in socially anxious individuals during reward processing. *Biology of mood & anxiety disorders*, 4(1), 7. <https://doi.org/10.1186/2045-5380-4-7>
- Martinotti, G., Santacrose, R., Pettorruso, M., Montemitro, C., Spano, M. C., Lorusso, M., Di Giannantonio, M., & Lerner, A. G. (2018). Hallucinogen persisting perception disorder: etiology, clinical features, and therapeutic perspectives. *Brain sciences*, 8(3), 47. <https://doi.org/10.3390/brainsci8030047>
- Matsushima, Y., Eguchi, F., Kikukawa, T., & Matsuda, T. (2009). Historical overview of psychoactive mushrooms. *Inflammation and Regeneration*, 29(1), 47-58. <https://doi.org/10.2492/inflammregen.29.47>
- McCabe, J. L., & Holmes, D. (2009). Reflexivity, critical qualitative research and emancipation: A Foucauldian perspective. *Journal of advanced nursing*, 65(7), 1518-1526. <https://doi.org/10.1111/j.1365-2648.2009.04978.x>
- McHugh, R. K., Votaw, V. R., Sugarman, D. E., & Greenfield, S. F. (2018). Sex and gender differences in substance use disorders. *Clinical psychology review*, 66, 12-23.
- McKnight, P. E., McKnight, K. M., Sidani, S., & Figueredo, A. J. (2007). *Missing data: A gentle introduction*. Guilford Press: New York.
- Merlin, M. D. (2003). Archaeological evidence for the tradition of psychoactive plant use in the old world. *Economic Botany*, 57(3), 295-323. [https://doi.org/10.1663/0013-0001\(2003\)057\[0295:aeftto\]2.0.co;2](https://doi.org/10.1663/0013-0001(2003)057[0295:aeftto]2.0.co;2)
- Mill, S. (1859). *On Liberty*. Batoche Books: Canada.
- Mithoefer, M. C., Wagner, M. T., Mithoefer, A. T., Jerome, L., & Doblin, R. (2011). The safety and efficacy of $\pm$ 3, 4-methylenedioxymethamphetamine-assisted psychotherapy in subjects with chronic, treatment-resistant posttraumatic stress disorder: the first randomized controlled pilot study. *Journal of Psychopharmacology*, 25(4), 439-452. <https://doi.org/10.1177/0269881110378371>
- Murji, K. (2020). The agony and the ecstasy: Drugs, media and morality. In *The Control of Drugs and Drug Users* (pp. 69-85). CRC Press.
- Newman, D. A. (2014). Missing data: Five practical guidelines. *Organizational Research Methods*, 17(4), 372-411.

- Nichols, D. E. (2016). Psychedelics. *Pharmacological reviews*, 68(2), 264-355.
<https://doi.org/10.1124/pr.115.011478>
- Nielsen, A. L. (2010). Americans' attitudes toward drug-related issues from 1975–2006: the roles of period and cohort effects. *Journal of Drug Issues*, 40(2), 461-493.
<https://doi.org/10.1177/002204261004000209>
- Nonnemaker, J. M., McNeely, C. A., & Blum, R. W. (2003). Public and private domains of religiosity and adolescent health risk behaviors: Evidence from the National Longitudinal Study of Adolescent Health. *Social science & medicine*, 57(11), 2049-2054. [https://doi.org/10.1016/s0277-9536\(03\)00096-0](https://doi.org/10.1016/s0277-9536(03)00096-0)
- Nunnally, 1978. *Psychometric theory* (2nd ed.), McGraw-Hill: New York.
- Office of International Religious Freedom (2019). 2019 Report on International Religious Freedom: South Africa. <https://www.state.gov/reports/2019-report-on-international-religious-freedom/south-africa/>
- Palhano-Fontes, F., Andrade, K. C., Tofoli, L. F., Santos, A. C., Crippa, J. A. S., Hallak, J. E., Ribeiro, S., & de Araujo, D. B. (2015). The psychedelic state induced by ayahuasca modulates the activity and connectivity of the default mode network. *PloS one*, 10(2), e0118143. <https://doi.org/10.1371/journal.pone.0118143>
- Pandya, C. (2019). What is an Acceptable Response Rate for Online Surveys? Retrieved from <https://www.appjetty.com/blog/acceptable-response-rate-for-online-surveys/> on 28/04/2021
- Parker, I. (1994). Reflexive research and the grounding of analysis: Social psychology and the psy-complex. *Journal of Community & Applied Social Psychology*, 4(4), 239-252.
- Parrott, A. C. (2013). MDMA, serotonergic neurotoxicity, and the diverse functional deficits of recreational ‘Ecstasy’ users. *Neuroscience & Biobehavioral Reviews*, 37(8), 1466-1484. <https://doi.org/10.1016/j.neubiorev.2013.04.016>
- Peltzer, K., & Phaswana-Mafuya, N. (2018). Drug use among youth and adults in a population-based survey in South Africa. *South African journal of psychiatry*, 24.
- Pérez-Pazos, J., Collazos, F., & Casas, M. (2015). Substance use among medical students: a literature review 1988-2013. *Actas Esp Psiquiatr*, 43(3), 109-21.

- Pestana, J., Beccaria, F., & Petrilli, E. (2020). Psychedelic substance use in the Reddit psychonaut community. A qualitative study on motives and modalities. *Drugs and Alcohol Today*.
- Petry, N. M. (2002). A comparison of young, middle-aged, and older adult treatment-seeking pathological gamblers. *The Gerontologist*, 42(1), 92-99.
- Pickersgill, M. D. (2014). Debating DSM-5: diagnosis and the sociology of critique. *Journal of Medical Ethics*, 40(8), 521-525. <https://jme.bmj.com/content/medethics/40/8/521.full>
- Pit, S. W., Vo, T., & Pyakurel, S. (2014). The effectiveness of recruitment strategies on general practitioner's survey response rates—a systematic review. *BMC medical research methodology*, 14(1), 1-14.
- Beckley Foundation (2017). Psychedelic Research Timeline.
<https://www.beckleyfoundation.org/psychedelic-research-timeline-2/>
- Reiff, C. M., Richman, E. E., Nemeroff, C. B., Carpenter, L. L., Widge, A. S., Rodriguez, C. I., Kalin, N. H., McDonald, W. M., & Work Group on Biomarkers and Novel Treatments, a Division of the American Psychiatric Association Council of Research. (2020). Psychedelics and Psychedelic-Assisted Psychotherapy. *American Journal of Psychiatry*, 391-410. <https://doi.org/10.1176/appi.ajp.2019.19010035>
- Riba, J., Romero, S., Grasa, E., Mena, E., Carrió, I., & Barbanoj, M. J. (2006). Increased frontal and paralimbic activation following ayahuasca, the pan-Amazonian inebriant. *Psychopharmacology*, 186(1), 93-98. <https://doi.org/10.1007/s00213-006-0358-7>
- Rosenbaum, J. F. (2005). Attitudes toward benzodiazepines over the years. *J Clin Psychiatry*, 66(Suppl 2), 4-8. <https://europepmc.org/article/med/15762813>
- Ross, S., Bossis, A., Guss, J., Agin-Liebes, G., Malone, T., Cohen, B., Mennenga, S. E., Belser, A., Kalliontzi, K., Babb, J., & Su, Z. (2016). Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: a randomized controlled trial. *Journal of psychopharmacology*, 30(12), 1165-1180. <https://doi.org/10.1177/0269881116675512>
- Ruane, D. (2015). Harm reduction or psychedelic support? Caring for drug-related crises at transformational festivals. *Dancecult: Journal of Electronic Dance Music Culture*, 7(1), 55-75. <https://doi.org/10.12801/1947-5403.2015.07.01.03>

- Rucker, J. J., Jelen, L. A., Flynn, S., Frowde, K. D., & Young, A. H. (2016). Psychedelics in the treatment of unipolar mood disorders: a systematic review. *Journal of Psychopharmacology*, 30(12), 1220-1229. <https://doi.org/10.1177/0269881116679368>
- Rust, J., & Golombok, S. (2014). *Modern psychometrics: The science of psychological assessment*. London, England: Routledge.
- Saunders, N. (1998). How the media report ecstasy. *Journal of Substance Misuse*, 3(2), 98-100.
- Savage, C., Savage, E., Fadiman, J., & Harman, W. (1964). LSD: Therapeutic effects of the psychedelic experience. *Psychological Reports*, 14(1), 111-120. <https://doi.org/10.2466/pr0.1964.14.1.111>
- Schenberg, E. E. (2018). Psychedelic-assisted psychotherapy: A paradigm shift in psychiatric research and development. *Frontiers in pharmacology*, 9, 733. <https://doi.org/10.3389/fphar.2018.00733>
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of communication*, 49(1), 103-122. <https://doi.org/10.1111/j.1460-2466.1999.tb02784.x>
- Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of communication*, 57(1), 9-20. <https://doi.org/10.1111/j.0021-9916.2007.00326.x>
- Schifano, F., Oyefeso, A., Webb, L., Pollard, M., Corkery, J., & Ghodse, A. H. (2003). Review of deaths related to taking ecstasy, England and Wales, 1997-2000. *BMJ (Clinical research ed.)*, 326(7380), 80-81. <https://doi.org/10.1136/bmj.326.7380.80>.
- Sessa, B., Higbed, L., & Nutt, D. (2019). A review of 3, 4-methylenedioxymethamphetamine (MDMA)-assisted psychotherapy. *Frontiers in Psychiatry*, 10, 138. <https://doi.org/10.3389/fpsy.2019.00138>
- Singer, D., & Hunter, M. (1999). The experience of premature menopause: a thematic discourse analysis. *Journal of Reproductive and Infant Psychology*, 17(1), 63-81. <https://doi.org/10.1080/02646839908404585>
- Smith, D. E., Raswyck, G. E., & Dickerson Davidson, L. (2014). From Hofmann to the Haight Ashbury, and into the future: the past and potential of lysergic acid diethylamide. *Journal of psychoactive drugs*, 46(1), 3-10.

- Soper, D.S. (2020). A-priori Sample Size Calculator for Multiple Regression [Software]. Retrieved from <http://www.danielsoper.com/statcalc>
- South African Students' Organization (1976, March). SASO Newsletter Vol. 6 – No. 1. *South African History Online*. Retrieved from <https://www.sahistory.org.za/sites/default/files/archive-files2/samar76.pdf>
- Speth, J., Speth, C., Kaelen, M., Schloerscheidt, A. M., Feilding, A., Nutt, D. J., & Carhart-Harris, R. L. (2016). Decreased mental time travel to the past correlates with default-mode network disintegration under lysergic acid diethylamide. *Journal of Psychopharmacology*, 30(4), 344-353. <https://doi.org/10.1177/0269881116628430>
- Spitzmüller, J., & Warnke, I. H. (2011). Discourse as a 'linguistic object': methodical and methodological delimitations. *Critical Discourse Studies*, 8(2), 75-94. <https://doi.org/10.1080/17405904.2011.558680>
- Stenstadvold, T. H. L. (2019). *After prohibition: A speculative look at Norway, after the war on drugs* (Master's thesis). Retrieved from https://aho.brage.unit.no/aho-xmlui/bitstream/handle/11250/2639602/TordStenstadvold_AfterProhibition_%20DiplomaReport_Spreads.pdf?sequence=1
- Stern, M. K., & Wiens, B. A. (2009). Ethnic differences in adolescent perceptions of and attitudes toward substance use. *Journal of ethnicity in substance abuse*, 8(1), 54-69.
- Stewart, R. E., Stirman, S. W., & Chambless, D. L. (2012). A qualitative investigation of practicing psychologists' attitudes toward research-informed practice: Implications for dissemination strategies. *Professional Psychology: Research and Practice*, 43(2), 100.
- Strassman, R. J. (1984). Adverse reactions to psychedelic drugs. A review of the literature. *J Nerv Ment Dis*, 172(10), 577-595.
- Swanson, L. R. (2018). Unifying theories of psychedelic drug effects. *Frontiers in pharmacology*, 9, 172.
- Taylor, G. W., & Ussher, J. M. (2001). Making sense of S&M: A discourse analytic account. *Sexualities*, 4(3), 293-314. <https://doi.org/10.1177/136346001004003002>
- Taylor, S. (2016). Moving beyond the other: A critique of the reductionist drugs discourse. *Cultuur and Criminaliteit*, 6(1), 100-118.
- Terre-Blanche, M., Kelly, K. and Durrheim, K. (2006). Why qualitative research? In Terre-Blanche, M., Durrheim, K. and Painter, D. (Eds). *Research in practice: applied*

- methods for the social sciences* (pp. 271-284.). Cape Town, South Africa: University of Cape Town Press.
- Trochim, W. M., & Donnelly, J. P. (2001). *Research methods knowledge base*. Cincinnati, OH: Atomic Dog Publishing.
- Tupper, K. W., Wood, E., Yensen, R., & Johnson, M. W. (2015). Psychedelic medicine: a re-emerging therapeutic paradigm. *Cmaj*, 187(14), 1054-1059.
<https://doi.org/10.1503/cmaj.141124>
- UK Drug Policy Commission. (2010). *Representations of drug use and drug users in the British press*. London, England: UKDPC.
- Van Heerden, M. S., Grimsrud, A. T., Seedat, S., Myer, L., Williams, D. R., & Stein, D. J. (2009). Patterns of substance use in South Africa: results from the South African Stress and Health study. *South African Medical Journal*, 99(5).
- Vizeli, P., & Liechti, M. E. (2017). Safety pharmacology of acute MDMA administration in healthy subjects. *Journal of Psychopharmacology*, 31(5), 576-588.
<https://doi.org/10.1177/0269881117691569>
- Webster, P. (2019). Denver votes to decriminalise psilocybin mushrooms. *The Lancet*, 393(10185), 2023. [https://doi.org/10.1016/s0140-6736\(19\)31082-7](https://doi.org/10.1016/s0140-6736(19)31082-7)
- Willig, C. (2013). *Introducing qualitative research in psychology*. New York, NY: McGraw-Hill Education (UK).
- Winstock, A. R., Barrat, M. J., Maier, L. I., Aldridge, A., Zhuparris, A., Davies, E., Hughes, C., Johnson, M., Kowalski, M., & Ferris, J. A. (2019). Global Drug Survey (GDS) 2019 Key Findings Report. Retrieved from
https://issuu.com/globaldrugsurvey/docs/gds2019_key_findings_report_may_16

Appendix A: Participant Information Sheet

Dear Mental Health Professional

My name is Kirsten Cosser and I am a student at the University of the Witwatersrand, conducting research in partial fulfilment of an MA in Social & Psychological Research degree, under the supervision of Dr Katherine Bain.

Much public debate has ensued since the US Food and Drug Administration's consideration of some psychedelics as potential treatments in clinical practice, yet little is known about the opinions of mental health professionals surrounding this issue. As such, you are invited to participate in a **short online questionnaire** that aims to determine attitudes towards **psychedelics and psychedelic-assisted therapy** among psychiatrists and psychologists.

Before you decide whether to participate, please read the following information carefully: **What will my participation involve?**

If you choose to participate, an anonymous online survey will follow that will ask questions about yourself, and your views on psychedelics and psychedelic-assisted therapy. The questionnaire should take you approximately **15-40 minutes** to complete.

What is the purpose of the study?

The study is being conducted from July to September 2020. The purpose of the study is to gain insight into the attitudes towards psychedelics and psychedelic-assisted therapy among mental health experts (psychiatrists and psychologists), and investigate individual factors that could influence these attitudes.

Why have I been invited to take part?

You have been invited to take this survey because you are indicated to be a clinical or counselling psychologist or a psychiatrist in South Africa. The study specifically seeks insight from experts in the mental health care field. Anyone who is a psychiatrist or a clinical or counselling psychologist registered with the HPCSA can participate.

Confidentiality and Anonymity

All appropriate measures have been taken to ensure that any information you provide is strictly confidential and anonymous. **You will not be asked to provide any specifically personally identifying information**, and all answers you provide will be stored on a password-protected spreadsheet on a password-protected computer. Raw data will only be accessible to me and my supervisor, and any reports will preserve your anonymity entirely. The anonymized data will be stored on my and my supervisor's password-protected computers for possible future research use.

Risks and Benefits

This study poses low risk to participants; however, some questions may be sensitive. Details of support resources will be provided at the end of the questionnaire. The study poses no direct benefit to participants, apart from possible self-reflection.

Informed Consent and Withdrawal

Should you complete the survey and click 'Done' at the end, this will be taken as your informed consent to participate. Participation is completely voluntary, and there is no penalty for withdrawing your participation. If you wish to withdraw, you can exit at any time before the 'Done' button at the end of the survey, and your data will not be recorded. You are also able to skip any question you do not wish to answer and progress to the next question.

Should you have any questions or concerns, you can contact:

The researcher, Kirsten Cosser, at cosserk@gmail.com or 0763387365

My supervisor, Katherine Bain, at katherine.bain@wits.ac.za or 0117174558

Should you have any concerns or complaints regarding the ethical procedures for the study, you can contact the WITS University Non-medical Human Research Ethics Committee at hrecnon-medical@wits.ac.za or 0117171408

Below is a list of mental health services you can contact, should you experience any distress while completing the survey:

South African Depression and Anxiety Group (SADAG)

SADAG offers free telephonic counselling services for people experiencing a range of mental health problems. Visit <http://www.sadag.org> for more information, or see contact details below:

General helpline (available 24/7): **0800 12 13 14**

Contact a counsellor (from 8am-8pm Monday to Sunday): **011 234 4837** For a suicidal emergency (available 24/7): **0800 567 567**

Narcotics Anonymous South Africa

Narcotics Anonymous offers free support services to people experiencing substance abuse problems. Visit <https://na.org.za> for more information, or contact their helpline on **0861 00 6962** (available 24/7)

During the national lockdown, Narcotics Anonymous is holding free online support group meetings daily via Zoom, which can be found at <https://na.org.za/online/>

Alcoholics Anonymous South Africa

Alcoholics Anonymous offers free support services to people experiencing alcohol abuse problems. Visit <https://www.aasouthafrica.org.za> for more information, or contact their helpline on **0861 435 722** (available 24/7).

During the national lockdown, Alcoholics Anonymous is holding free online support group meetings daily via Zoom, which can be found at <https://www.aasouthafrica.org.za/Meetings>

Al-Anon Family Groups

Al-Anon Family Groups is a support group network for friends and family of people experiencing alcohol abuse problems. Visit <https://www.alanon.org.za> for more information, or contact their helpline on **0861 252 666** (available 24/7).

During the national lockdown, the Al-Anon network is holding free online support group meetings daily via Zoom meetings, which can be found at <https://www.alanon.org.za/meetings/>

Alternatively, a large database of mental health care providers in South Africa (including psychologists, psychiatrists, counsellors and social workers) can be found at www.therapistdirectory.co.za

If you have read and understood this information and would like to participate in the survey, please click 'Next' below

Appendix B: Participant Invitation

Dear Mental Health Professional

Much public debate has ensued since the U.S. Food and Drug Administration's consideration of some psychedelics as potential treatments in clinical practice. Psychedelic-assisted therapies are now being recommended in some countries for the treatment of various mental illnesses.

Treatments involve receiving psychotherapy during the transient effects of a psychedelic substance (for a review, see Chi and Gold, 2020).

Surveys on professionals' attitudes have been conducted internationally (with mixed results), but not locally.

As a registered South African psychiatrist or clinical/counselling psychologist, you are invited to participate in a **short online questionnaire** that aims to determine levels of awareness around and attitudes towards **psychedelics and psychedelic-assisted therapy** among psychiatrists and psychologists.

Note that your participation is invited even if you do not know much about psychedelics.

If you decide to participate, the link below will direct you to an anonymous online survey that will ask questions about yourself and your views on psychedelics and the concept of psychedelic-assisted therapy. The study has obtained ethics clearance through the University of the Witwatersrand's HREC (protocol H20/06/07).

The questionnaire should take you approximately **10-25** minutes to complete.

All appropriate measures have been taken to ensure that any information you provide is strictly confidential and anonymous. **You will not be asked to provide any specifically personally identifying information.**

If you would like to contribute to a South African body of research into this emerging topic, **click the link below** (or copy/paste it into your browser) to be directed to the survey, as well as some more information about the study:

Appendix C: Questionnaire and Debriefing Note

What is your current age? [Enter number]

What is your race? [Drop-down box with options: Black African, Coloured, Indian, Asian, White, Other – please specify]

What is your gender? [Text box]

What is your mother tongue (first language)

What is your religious or spiritual affiliation, if any? (Tick all that apply) [Tick Boxes: Islam, Christianity, Hinduism, Traditional African Religions, Judaism, Buddhism, None, Other]

Please describe your religious or spiritual affiliation in your own words (whatever it means to you). [Text box]

[If religion has been indicated] Please indicate how far you agree/disagree with the following statements: [Options: Strongly Disagree, Disagree, Neither agree nor disagree, Agree, Strongly Agree]

- My religious/spiritual views play a big role in my everyday life
- My religious/spiritual views influence the decisions I make
- I am a very religious/spiritual person

For the following items, please indicate the extent to which you feel positive or negative towards each issue. Scores of 0 indicate greater negativity, and scores of 100 indicate greater positivity. Scores of 50 indicate that you feel neutral about the issue. [Sliding scale for each item, from 0 to 100]

- Abortion
- Limited government authority
- Military and national security
- Religion
- Welfare benefits
- Gun ownership

- Homosexual Marriage
- Fiscal responsibility
- Business
- The family unit
- Patriotism

How would you describe your political affiliation or leaning, in your own words? [Text box]

What best describes your current occupation? [Drop-down box: psychologist, psychiatrist, medical officer currently specializing in psychiatry, intern psychologist, community service psychologist; Other - please specify]

[IF psychiatry]: Please indicate your training area within psychiatry [Options: General Adult Psychiatry, Child Psychiatry, Geriatric Psychiatry, Other (please specify)]

[IF psychology]: Please indicate your training area within psychology [Options: Clinical Psychologist, Counselling Psychologist Other (please specify)]

Do you work in... [Drop-down box: Private Practice, Public Health Services, University, Other (please specify)]

Please describe the work you do in more detail (do you specialize in any particular mental health conditions, treatment areas, modalities, etc.?)

What is the highest qualification you have received to date? [Text box]

In what year did you achieve this qualification? [Text box]

How up to date do you feel you are with new scientific developments in your field of psychiatry/psychology? [Options: not up to date, a little up to date, somewhat up to date, very up to date]

Which academic journals do you tend to read? [Text box]

How much formal training did you receive about psychedelic substances? [Options: none, very little, a moderate amount, a lot]

Have you had professional experience with patients who have reported psychedelic use? [Yes/No]

[IF yes] Please describe this experience (working with patients who report psychedelics use) in more detail. [Text box]

How would you define “psychedelic substances”? [Text box]

Which of the following substances have you heard of? Tick all that apply. [Tick boxes out of:]

- Psilocybin ('magic mushrooms')
- MDMA/ecstasy
- LSD ('acid')
- DMT/Ayahuasca
- Ibogaine (Iboga)
- Mescaline (e.g. San Pedro/Peyote cactus)
- Salvia (Salvia divinorum)
- Ketamine

Of the substances you identified as having heard of, please indicate where you found out about each substance (if more than one source, choose where you received most of your information from) [Tick single box]

- Entertainment media (movies, fiction books, TV series, video games)
- Other internet sources (forums, blogs, encyclopedias, social media)
- News media
- Academic sources (journal articles, conferences, books, etc.)
- Professional training (during qualification or post-qualification training)
- Friends or family

Please indicate whether you have used any of the following substances, and frequency of use (Select all that apply). Remember that all your responses are confidential and anonymous; nothing can be traced back to you personally. If you would prefer to skip this question, simply scroll down. (Regular Use, Moderate Use/Experimentation; Limited Use/Experimentation; Never Used)

- Alcohol
- Tobacco
- Cocaine
- Cannabis
- Psilocybin ('magic mushrooms')
- MDMA/Ecstasy
- Heroin
- LSD ('acid')
- Caffeine
- DMT/Ayahuasca
- Ibogaine (Iboga)
- Mescaline (e.g. San Pedro/Peyote cactus)
- Ketamine
- Mandrax
- Methylphenidate (Ritalin/Concerta)
- Opium
- Other Narcotic Analgesics (e.g. Morphine, Oxycodone, Codeine, Methadone, Hydrocodone)
- Other Stimulants (e.g. Methamphetamine, Amphetamine, Cathinone, Methcathinone)
- Benzodiazepines (e.g. Xanax, Stilnox, Valium)
- Other

[If Other was selected] Please specify [Text box]

Have you, or has a close friend or family member, had a particularly negative experience with any prescription or illicit substances (e.g. overdose, addiction, difficult psychological experience)? [Yes/No]

[IF Yes] Please describe this in more detail [Text box]

Do you know any healthy individuals who have used psychedelic substances safely?
[Yes/No]

[IF Yes] Please describe this in more detail [Text box]

Have you heard of the term “psychedelic therapy”? [Yes/No]

[IF yes] Please describe what you understand by the term “psychedelic therapy”
[Text box]

20.2) [IF yes] Where did you hear about psychedelic therapy? (if more than one source, please provide the source you have received most of your information from)

- Entertainment media (movies, fiction books, TV series, video games)
- Other internet sources (forums, blogs, encyclopedias)
- News media
- Academic sources (journal articles, conferences, books, etc.)
- Professional training (during qualification or post-qualification training)
- Friends or family

Please indicate the extent to which you agree or disagree with each of the following statements: [Likert-type: strongly disagree, disagree, neutral/I don't know, agree, strongly agree]

The use of psychedelic substances:

- Increases risk of future psychotic disorders
- Is safe for recreational purposes
- Increases risk of future mood disorders

- Can be safe for religious/spiritual purposes
- Increases risk of suicidality
- Could be used to treat anxiety
- Does not worsen existing psychotic disorders
- Worsens existing mood disorders
- Can allow for creative self-exploration
- Worsens existing suicidality
- Requires more research to determine safety
- Could be used to treat depression

Please indicate the extent to which you agree or disagree with each of the following statements. You can (but are not required to) elaborate on your choice for each statement.

Psychedelic substances:

- Should be legal for personal use
 - Please explain your choice [Text box]
- Should *not* be legal for medical use under supervision
 - Please explain your choice [Text box]
- Show promise in treating psychotic disorders
 - Please explain your choice [Text box]
- May improve treatment outcomes when used during psychotherapy
 - Please explain your choice [Text box]
- Are unsafe for recreational use
 - Please explain your choice [Text box]
- Are unsafe under medical supervision
 - Please explain your choice [Text box]

If sufficient research suggested that psychedelic therapy was safe and effective for the treatment of some mental illnesses, and it was legalized, would you be interested in learning more about it? [Options: No, Definitely Not; No, Probably Not; Maybe; Yes, Moderately Interested; Yes, Definitely Interested]

If there is anything else you think the researcher should know, please comment below: [Text box].

[END OF SURVEY]

[DEBRIEFING NOTE:]

Your response has been recorded. Thank you for participating in this survey. If you have experienced any distress while completing the survey, below is a list of mental health services you can contact:

Database of mental health care providers: www.therapist-directory.co.za

Alcoholics Anonymous South Africa: <https://www.aasouthafrica.org.za>

Narcotics Anonymous South Africa: <https://na.org.za>

Should you have any questions or concerns about this study, or would like to receive a summary of its findings, you can contact:

The researcher, Kirsten Cosser, at cosserk@gmail.com or 0763387365

My supervisor, Katherine Bain, at katherine.bain@wits.ac.za or 0117174558

Should you have any concerns or complaints regarding the ethical procedures for the study, you can contact the WITS University Non-medical Human Research Ethics Committee at hrecnon-medical@wits.ac.za or 0117171408

Appendix D: Ethics Clearance Certificate



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Cosser

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: H20/06/07

PROJECT TITLE

Attitudes towards psychedelics and psychedelic-assisted therapy among South African mental health care providers

INVESTIGATOR(S)

Ms K Cosser

SCHOOL/DEPARTMENT

Human and Community Development/

DATE CONSIDERED

19 June 2020

DECISION OF THE COMMITTEE

Approved
Risk Level: Low

EXPIRY DATE

26 July 2023

DATE 27 July 2020

CHAIRPERSON

A handwritten signature in black ink, appearing to read "J Knight".

(Professor J Knight)

cc: Supervisor : Professor K Bain

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

A handwritten signature in black ink, appearing to read "K Cosser".

Signature

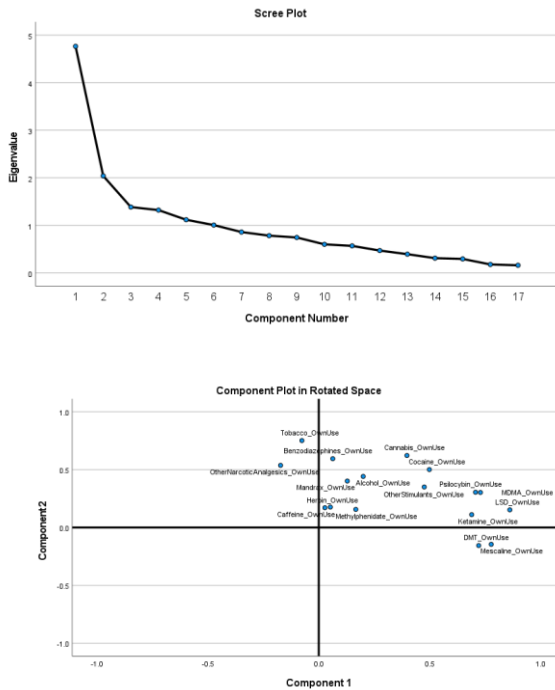
Date

27 / 07 / 2020

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix E: Factor Structure

Drug Use



Rotated Component Matrix^a

	Component	
	1	2
LSD_OwnUse	.861	.153
Mescaline_OwnUse	.777	-.145
MDMA_OwnUse	.729	.303
DMT_OwnUse	.721	-.156
Psilocybin_OwnUse	.707	.305
Ketamine_OwnUse	.689	.111
OtherStimulants_OwnUse	.475	.350
Methylphenidate_OwnUse	.167	.156
Tobacco_OwnUse	-.076	.751
Cannabis_OwnUse	.397	.622
Benzodiazepines_OwnUse	.063	.594
OtherNarcoticAnalgesics_OwnUse	-.172	.537
Cocaine_OwnUse	.499	.501
Alcohol_OwnUse	.200	.441
Mandrax_OwnUse	.129	.401
Caffeine_OwnUse	.052	.176
Heroin_OwnUse	.028	.171

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

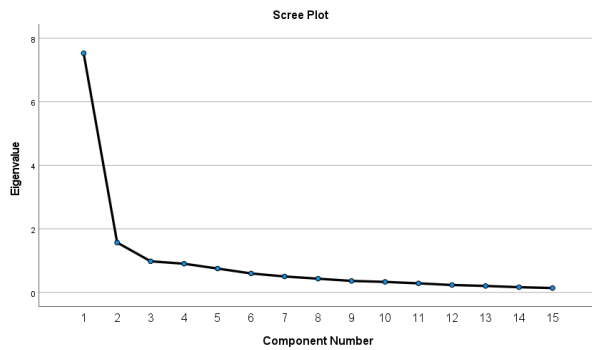
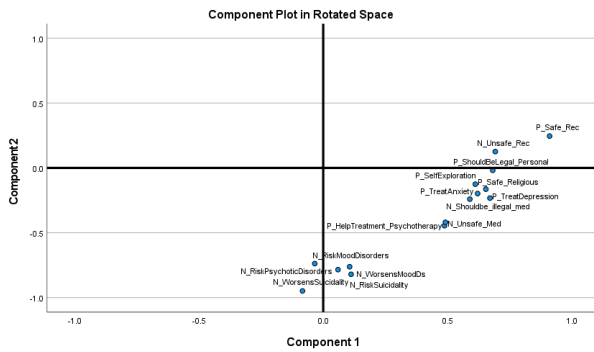
a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.764	28.022	28.022	4.764	28.022	28.022	4.132	24.304	24.304
2	2.040	11.999	40.021	2.040	11.999	40.021	2.672	15.717	40.021
3	1.385	8.145	48.165						
4	1.321	7.771	55.936						
5	1.118	6.577	62.513						
6	1.006	5.918	68.432						
7	.860	5.056	73.488						
8	.784	4.611	78.099						
9	.745	4.384	82.483						
10	.601	3.535	86.018						
11	.568	3.344	89.362						
12	.470	2.766	92.128						
13	.394	2.319	94.447						
14	.311	1.827	96.274						
15	.295	1.733	98.007						
16	.178	1.048	99.055						
17	.161	.945	100.000						

Extraction Method: Principal Component Analysis.

Attitudes (Psychedelics/PAT)



Pattern Matrix^a

	Component	
	1	2
P_Safe_Rec	.911	.245
N_Unsafe_Rec	.692	.126
P_ShouldBeLegal_Personal	.682	-.019
P_TreatDepression	.671	-.232
P_Safe_Religious	.654	-.164
P_TreatAnxiety	.621	-.198
P_SelfExploration	.612	-.125
N_Shouldbe_illegal_med	.590	-.241
N_Unsafe_Med	.492	-.419
P_HelpTreatment_Psychotherapy	.488	-.445
N_WorsensSuicidality	-.083	-.948
N_RiskSuicidality	.112	-.819
N_RiskMoodDisorders	.059	-.784
N_WorsensMoodDs	.106	-.762
N_RiskPsychoticDisorders	-.034	-.737

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 iterations.

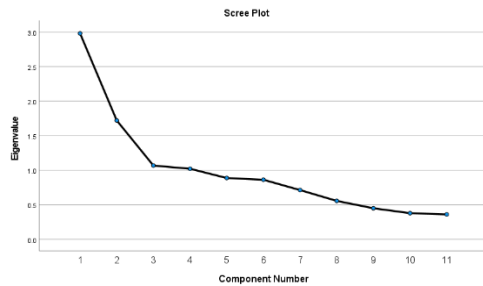
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	7.530	50.199	50.199	7.530	50.199	50.199	6.211
2	1.571	10.476	60.675	1.571	10.476	60.675	5.975
3	.981	6.540	67.216				
4	.904	6.026	73.241				
5	.752	5.015	78.257				
6	.598	3.987	82.244				
7	.503	3.356	85.599				
8	.433	2.888	88.488				
9	.363	2.419	90.907				
10	.333	2.219	93.125				
11	.286	1.910	95.035				
12	.235	1.565	96.601				
13	.205	1.366	97.966				
14	.166	1.107	99.073				
15	.139	.927	100.000				

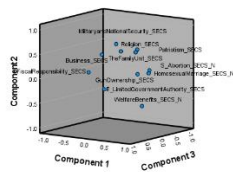
Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Conservatism (SECS)



Component Plot in Rotated Space



Pattern Matrix^a

	Component		
	1	2	3
S Homosexual Marriage	.743	.131	-.059
S Abortion (Rev)	.739	.187	-.093
E Welfare Benefits (Rev)	.639	-.537	.025
E Gun Ownership	.606	.126	.132
S Military and National Security	.009	.668	.030
S The Family Unit	.170	.543	.092
S Patriotism	.301	.538	-.293
S Religion	.425	.528	-.059
E Business	-.040	.509	.462
E Limited Government Authority	.226	-.131	.757
Fiscal Responsibility	-.229	.156	.656

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.^a

a. Rotation converged in 34 iterations.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2.981	27.097	27.097	2.981	27.097	27.097	2.519
2	1.721	15.643	42.740	1.721	15.643	42.740	2.210
3	1.068	9.706	52.446	1.068	9.706	52.446	1.414
4	1.022	9.288	61.734				
5	.887	8.067	69.802				
6	.863	7.842	77.644				
7	.713	6.483	84.127				
8	.556	5.059	89.186				
9	.450	4.091	93.277				
10	.379	3.442	96.719				
11	.361	3.281	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix F: Supplementary MRA

GENDER AND DRUG USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.224 ^a	.050	.042	2.381

a. Predictors: (Constant), Gender

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.477	1	32.477	5.727	.018 ^b
	Residual	612.441	108	5.671		
	Total	644.918	109			

a. Dependent Variable: Psychedelic Drug Use

b. Predictors: (Constant), Gender

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.605	.938		3.844	.000
	Gender	-1.247	.521	-.224	-2.393	.018

a. Dependent Variable: Psychedelic Drug Use

RACE AND PLS USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.161 ^a	.026	.017	2.412

a. Predictors: (Constant), Race

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.729	1	16.729	2.876	.093 ^b
	Residual	628.189	108	5.817		
	Total	644.918	109			

a. Dependent Variable: Psychedelic Drug Use

b. Predictors: (Constant), Race

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.411	1.108		-.371	.711
	Race	1.011	.596	.161	1.696	.093

a. Dependent Variable: Psychedelic Drug Use

RELIGION AND PLS USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.286 ^a	.082	.073	2.341

a. Predictors: (Constant), Religion

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.883	1	52.883	9.647	.002 ^b
	Residual	592.035	108	5.482		
	Total	644.918	109			

a. Dependent Variable: Psychedelic Drug Use

b. Predictors: (Constant), Religion

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.545	.673		-.809	.420
	Religion	1.427	.459	.286	3.106	.002

a. Dependent Variable: Psychedelic Drug Use

Appendix G: Chi-Square Tables, Excluded Graphs

Chi-square Tests of Association: SECS Political Items and PAT/Psychedelics Attitudes

Measures	Abortion	Limited Government Authority	Military/ National Security	Religion	Patriotism
Safety: Recreational	<i>ns</i>	<i>ns</i>	.048	<i>ns</i>	.007
Safety: Religious	/	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Treatment Anxiety	/	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Treatment Depression	/	<i>ns</i>	<i>ns</i>	<i>ns</i>	/
Help Treatment Psychotherapy	/	/	/	/	/
Legal: Personal	/	/	<i>ns</i>	<i>ns</i>	<i>ns</i>
Does not worsen Psychotic Disorders	/	/	/	/	/
Treat Psychotic Disorders	/	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Unsafe: Recreational	/	/	/	/	/
Unsafe: Medical	/	/	/	/	/
Illegal: Medical	/	/	/	/	/
Risk Psychotic Disorders	/	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Risk Mood Disorders	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Risk Suicidality	/	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Worsen Mood Disorders	<i>ns</i>	/	<i>ns</i>	<i>ns</i>	<i>ns</i>
Worsens Suicidality	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	/

Notes. / indicates that an assumption was not met, therefore results are not interpretable. Variables omitted from this table (see discussion above) include: some attitude variables (self-exploration;

more safety research needed; curiosity if proven safe); some SECS variables (welfare benefits, gun ownership, the family unit, homosexual marriage, business).

Chi-square Tests of Association: Demographics, Knowledge and Attitudes

Measures	Race	Age	Gender	Language	Occupation	Religion	Up to Date	Professional Experience	Negative Drug Experience	Qualification Year	Info Source PAT	Drug Use	Heard of PAT	Heard of Safe Use
Safety: Recreational	<i>ns</i>	<i>/</i>	.017	<i>ns</i>	<i>Ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	.007	<i>ns</i>	.044
Safety: Religious	<i>ns</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>Ns</i>	<i>ns</i>	<i>ns</i>	.020	<i>ns</i>	.017	.002	.001	<i>ns</i>	.007
Treatment Anxiety	<i>ns</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>Ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	.046	<i>ns</i>	<i>ns</i>	.013	.009	.002
Treatment Depression	.013	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>/</i>	.000	<i>/</i>	.025
Treatment Psychotherapy	.037	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>Ns</i>	<i>ns</i>	<i>ns</i>	.033	<i>ns</i>	<i>ns</i>	<i>/</i>	.000	.000	.001
Legal: Personal	<i>ns</i>	<i>/</i>	.016	<i>ns</i>	<i>Ns</i>	.005	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	.016	<i>ns</i>	.018
Does not worsen Psychotic Disorders	<i>ns</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>Ns</i>	<i>ns</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
Treat Psychotic Disorders	<i>ns</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	.004	<i>ns</i>	<i>/</i>	<i>/</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Unsafe: Recreational	.044	/	ns	ns	Ns	ns	.021	/	ns	ns	ns	ns	ns	.048
Unsafe: Medical	.000	/	ns	ns	/	ns	/	ns	/	/	/	ns	/	.000
Illegal: Medical	ns	/	ns	ns	/	/	/	ns	/	/	/	/	/	.000
Risk Psychotic Disorders	ns	/	ns	ns	Ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Risk Mood Disorders	ns	/	ns	ns	Ns	.011	ns	ns	ns	ns	ns	.027	/	.020
Risk Suicidality	ns	/	ns	/	/	.020	/	ns	ns	.021	ns	/	/	.003
Worsen Mood Disorders	ns	/	ns	ns	/	ns	ns	ns	ns	.028	ns	ns	/	.001
Worsen Suicidality	/	/	ns	/	/	ns	/	ns	ns	ns	ns	/	/	.008

Notes. Notes. / indicates that an assumption was not met, therefore results are not interpretable. Variables for which no chi-square tests could not be interpreted due to assumption violation have been omitted from this table.