Clinical Psychologist

ISSN: 1328-4207 (Print) 1742-9552 (Online) Journal homepage: www.tandfonline.com/journals/rcnp20

Psychologists' attitudes towards the use of MDMA in therapy may be shaped by personal experiences

Rita Ildiko Csako, Daniel Shepherd, Emese E. Vitalis & David Cullen

To cite this article: Rita Ildiko Csako, Daniel Shepherd, Emese E. Vitalis & David Cullen (13 Aug 2026): Psychologists' attitudes towards the use of MDMA in therapy may be shaped by personal experiences, Clinical Psychologist, DOI: 10.1080/13284207.2026.2703685

To link to this article: https://doi.org/10.1080/13284207.2026.2703685

Published online: 13 Aug 2026.

CLINICAL PSYCHOLOGIST
https://doi.org/10.1080/13284207.2026.2703685

Psychologists' attitudes towards the use of MDMA in therapy may be shaped by personal experiences

Rita Ildiko Csako[a], Daniel Shepherd[a], Emese E. Vitalis[b] and David Cullen[c]

[a]Department of Psychology and Neuroscience, Auckland University of Technology, Auckland, New Zealand; [b]Illinois School of Professional Psychology Faculty, National Louis University, Chicago, IL, USA; [c]Centre for the Health Economy, Macquarie University, Sydney, Australia

ABSTRACT

Objective: MDMA-Assisted Therapy (MDMA-AT) has demonstrated efficacy in the treatment of several mental health conditions, most notably post-traumatic stress disorder. To better understand what shapes the attitudes of healthcare professionals we investigated whether psychologists' own experience with MDMA impacts the attitudes towards the therapeutic and recreational uses of MDMA.

Method: The study involved 74 registered psychologists in Aotearoa New Zealand who participated in an anonymous online survey aimed at gathering data on their understanding of and attitudes towards the therapeutic and recreational uses of MDMA.

Results: Nearly half of the surveyed professionals reported previous experience with MDMA, either recreationally or therapeutically. Noteworthy differences were identified in various aspects of attitudes between therapists with prior MDMA use and those without such experience. Overall, the surveyed psychologists expressed broadly favourable attitudes towards MDMA-AT.

Conclusion: Consistent with previous studies, this research emphasises the imperative need for education grounded in scientific evidence and professional training on the therapeutic use of MDMA for practicing psychologists and other health professionals. Such education and training are essential for better understanding MDMA-AT, mitigating misinformation and decreasing stigma associated with it.

KEY POINTS

What is already known about this topic:

(1) PTSD is a global health concern with significant clinical and economic burdens, showing higher prevalence in New Zealand than worldwide estimates.
(2) Standard PTSD treatments have variable effectiveness and high dropout rates, prompting urgent exploration of innovative, evidence-based alternatives like psychedelic-assisted therapies.
(3) International clinical trials demonstrate MDMA-assisted therapy's safety and effectiveness, but research and clinical adoption in Oceania remain limited and constrained.

What this topic adds:

(1) As in other parts of the world, there is a critical need for enhanced professional education on psychedelic substances.
(2) Professional advocacy for the use of MDMA in practice environments is likely related to personal experience with psychedelic substances.
(3) As in Australia, there is support for the use of psychedelic substances in therapeutic environments, suggesting that regulatory changes in New Zealand health delivery legislation should be explored.

ARTICLE HISTORY

Received 31 August 2025
Accepted 16 June 2026

KEYWORDS

MDMA-assisted therapy; psychologists; attitudes; psychedelics; drug policy; PTSD

Introduction

Mental health challenges significantly strain healthcare systems worldwide, and in Aotearoa New Zealand, these challenges are similarly prevalent, with 20% of people experiencing mental illness or considerable mental distress each year, and 50–80% facing mental distress or addiction at some point in their lives (New Zealand Government, 2018). Data from the 2021 and 2023 General Social Survey indicate a notable decline in the overall mental wellbeing of New Zealanders since 2018 (Statistics New Zealand, 2022, 2024). The annual cost of serious mental illnesses was $NZ12 billion in 2018 (New Zealand Government,

CONTACT Daniel Shepherd daniel.shepherd@aut.ac.nz

2018) and is now approaching NZ$20 billion annually (Office of the Auditor-General, 2024). Cost of state-funded therapy for sexual trauma survivors alone reached $NZ284 million in 2022 (Accident Compensation Corporation, 2022). Widespread concern about mental health and service provision in Aotearoa New Zealand prompted a Government Inquiry into Mental Health and Addiction, which identified, among other issues, an escalating demand for specialist services (New Zealand Government, 2018).

Not surprisingly, there is a widely acknowledged need for innovative, evidence-based interventions for mental health conditions to reduce their clinical and economic burdens (World Health Organization, 2022). After a long pause, research into psychedelic-assisted therapy has re-emerged as a potential treatment for various mental disorders, with Posttraumatic Stress Disorder (PTSD) being the main target for MDMA-assisted therapy (MDMA-AT: Mitchell et al., 2021). Some possible reasons behind this renewed interest are reduced stigma towards mind-altering substances in Western societies, shifts in regulations, increased media interest with more positive portrayals of psychedelics, a fascination with spirituality and consciousness, increase in privately funded research organisations and advances in brain imaging which allow the underlying mechanisms to be elucidated (Barnett et al., 2018; Davis et al., 2022).

Multiple clinical trials have supported the effectiveness of MDMA as an adjunct to psychotherapy for various psychiatric disorders, though the strongest and most consistently evidenced indication for MDMA-AT is PTSD. The lifetime prevalence of PTSD in Aotearoa New Zealand is estimated at 6.1% (Koenen et al., 2017), with elevated risk among specific groups such as veterans, especially Māori veterans (Richardson et al., 2020). Several systematic reviews and meta-analyses have consistently shown that MDMA-AT reduces PTSD symptoms (Bahji et al., 2020; Hoskins et al., 2021; Illingworth et al., 2021; Smith et al., 2022; Tedesco et al., 2021; Wolfgang et al., 2025). The most recent and comprehensive meta-analysis, including 11 randomised clinical trials with more than 300 participants, confirmed these findings (Højlund et al., 2025). A meta-analysis found MDMA-AT had similar or larger effects than Prolonged Exposure therapy, with lower dropout rates (Amoroso & Workman, 2016).

Emerging evidence suggests potential applications in other clinical populations. For example, a randomised, double-blind, placebo-controlled pilot study found that MDMA-AT significantly reduced social anxiety in autistic adults (Danforth, 2019; Danforth et al., 2018) and it is also being investigated for anxiety and depression associated with life-threatening illness, including cancer-related distress (Barone et al., 2022; Bhagavan et al., 2024; Wolfson et al., 2020). Early studies indicate that MDMA-AT may be safe and potentially beneficial for individuals with alcohol use disorder, with preliminary findings showing reductions in drinking risk levels and improvements in psychosocial functioning (Sessa et al., 2021; Thurgur et al., 2025). Additionally, exploratory analyses suggest that MDMA-AT may reduce eating disorder symptoms, highlighting another possible therapeutic application (Brewerton et al., 2022). While these findings suggest broader therapeutic potential, the most substantial and methodologically advanced body of research on MDMA-AT has been conducted in PTSD populations.

Avanceña et al. (2022) estimated that expanding access to MDMA-AT for chronic and severe PTSD to 25–75% of the eligible patients in the USA could prevent between 43,618 and 106,932 deaths over a 10-year period. Later, economic analysis confirmed the cost-effectiveness of this treatment compared to standard care (Stanicic et al., 2024). While no similar study exists in Aotearoa New Zealand, it is reasonable to assume that expanding access to MDMA-AT for PTSD would also provide significant health and economic benefits.

Reflecting this broader shift in the field, several psychedelic-assisted treatments are expected to gain approval in multiple countries in the coming years (Hearn et al., 2022; Reiff et al., 2020). Australia became the first country in the 21st century to formally recognise MDMA and psilocybin as medicines, reclassifying them from Schedule 9 (prohibited substances) to Schedule 8 (controlled drugs) from 1 July 2023 and allowing authorised psychiatrists to prescribe MDMA for PTSD in strictly supervised clinical settings (Australian Government, 2023a). In Aotearoa New Zealand, MDMA-AT is not yet approved, but it is being actively researched as a potential treatment for PTSD.

MDMA as medicine

MDMA (3,4-methylenedioxymethamphetamine) is a chemical compound which induces the release of presynaptic serotonin (5-HT), norepinephrine, dopamine and oxytocin (Drevin et al., 2024; Hysek et al., 2012; Rothman et al., 2001; Simmler et al., 2013; Vizeli & Liechti, 2017), which in turn produce subjective effects such as feelings of wellbeing, euphoria, heightened sensory awareness, cognitive changes and depersonalisation (Poyatos et al., 2023; Vollenweider et al., 1998). Of therapeutic relevance, the neurochemical effects of

MDMA contribute to increased prosocial behaviours, heightened affiliative feelings and a diminished response to negative social stimuli, such as social rejection (Dumont et al., 2009; Hysek et al., 2014; Kamilar-Britt & Bedi, 2015). Pertinently, by reducing or eliminating chronic hyperarousal, stress reactions (Mitchell et al., 2021), stress-induced fear learning (Parekh et al., 2022) and facilitating fear extinction (Maples-Keller et al., 2022; Vizeli et al., 2022; Young et al., 2017), MDMA can assist not only trauma-focused PTSD treatments (Sessa, 2017) but also a range of trauma- and stress-related psychiatric conditions (Anderson et al., 2020; Bhagavan et al., 2024; Danforth, 2019; Danforth et al., 2018; Sessa et al., 2021). These effects may help to address some of the limitations of current mental health treatments, which are often lengthy, have variable success rates and high attrition, with many patients failing to respond to therapy or not fully recover (Bhatt et al., 2022; Cuijpers et al., 2024; Gutner et al., 2016).

In addition, researchers and clinicians argue that MDMA-AT's therapeutic benefits stem not only from the pharmacological effects of the drug itself but that the therapeutic context in which MDMA-AT is administered can also facilitate trauma processing and enhance treatment outcomes (Perivoliotis et al., 2025; Sottile & Vida, 2022). For example, MDMA-AT also produces significant positive changes in transdiagnostic mental processes related to self-experience, such as self-compassion, that are commonly impaired in individuals who respond less well to traditional therapy (Van Der Kolk et al., 2023). By supporting the formation of a strong therapeutic alliance, MDMA-AT may be effective among patients who have not benefited from existing trauma-focused therapies (Haggarty et al., 2024; Molla et al., 2023).

Safety and tolerability of MDMA-AT

Clinical studies indicate that MDMA-AT has a favourable risk–benefit ratio for PTSD treatment (Mitchell, Bogenschutz, et al., 2023; Mitchell, Ot'alora, et al., 2023) and may outperform traditional SSRIs, such as paroxetine and sertraline in safety and effectiveness (Feduccia et al., 2023). Clinical trials suggest that MDMA-AT is generally well tolerated, even among individuals with severe PTSD and comorbidities (Illingworth et al., 2021; Mitchell, Bogenschutz, et al., 2023; Mitchell, Ot'alora, et al., 2023; Smith et al., 2022), which has supported the progression of MDMA-AT into late-stage clinical trials for PTSD treatment. To date, more than 1,900 individuals have taken part in MDMA studies, with no unexpected serious adverse events requiring emergency medical intervention (MAPS Investigator's Brochure, 2019). A review by Chiruta et al. (2021) concluded that over seven decades of research, therapeutic MDMA in a controlled setting has not been linked to mental illness or adverse health effects, lasting psychological or physiological harm (Doblin et al., 2014), or dependency following treatment (Doblin, 2002; Mithoefer et al., 2018; Sessa & Nutt, 2015), and meta-analyses of randomised clinical trials found MDMA to be safe (Bahji et al., 2020; Højlund et al., 2025; Hoskins et al., 2021; Illingworth et al., 2021; Smith et al., 2022; Tedesco et al., 2021; Wolfgang et al., 2025).

Despite encouraging clinical results, some clinicians and researchers have raised concerns regarding the safety of MDMA-AT (Kisely, 2023; Wang et al., 2024; Yang et al., 2024). Beyond the commonly reported transient side effects, such as anxiety, nausea, vomiting and jaw clenching (Smith et al., 2022), one concern is neurotoxicity (Costa & Gołembiowska, 2022; Ricaurte et al., 2000). However, these reports were based on animal models using doses far higher than those administered in human therapeutic trials (Wolfgang et al., 2025). In recreational settings, hyperthermia, cardiovascular and psychological problems have been documented, but many reports are limited by methodological issues, such as including concurrent substance use, reliance on retrospective self-reports and uncertainty about dose and purity (Miazzi et al., 2025). For instance, while hyperthermia is generally clinically insignificant in controlled therapeutic settings, nonclinical factors, such as polydrug use, physical exertion, crowded conditions and other situational stressors can exacerbate the risk in nonclinical settings (Wolfgang et al., 2025).

Attitudes towards the therapeutic use of MDMA (MDMA-AT)

As psychedelic-assisted therapies gain renewed scientific and clinical interests, understanding healthcare professionals' attitudes is essential for shaping training, policy and clinical implementation. While MDMA-AT shows clinical promise, its adoption depends on mental health professionals' willingness and ability to integrate it into practice (Encantado et al., 2026). Even with growing public acceptance and promising clinical results, stigma can cause clinicians to delay adopting MDMA-AT, when it is clinically appropriate (Davis et al., 2022; Hearn et al., 2022). Beyond providing direct care, mental health professionals influence the field by shaping ethical standards, promoting harm reduction and offering

evidence-based guidance (Encantado et al., 2026). Their capacity to educate colleagues and clients helps prevent unsafe practices, improves overall understanding and challenges stigma surrounding psychedelic-assisted therapies (Barnett et al., 2024; Davis et al., 2022). Consequently, research is increasingly focused on mental-health professionals' perspectives to address these barriers and inform targeted training and education.

A recent systematic review covering 29 attitude studies, with 17 focusing on health professionals, reported mixed to positive beliefs in Psychedelic-Assisted Therapy (PAT), with low baseline knowledge and notable concerns regarding legal status, implementation and side effects (Wells et al., 2024). A survey of US healthcare professionals, including physicians and nurses, found strong confidence in the therapeutic potential of MDMA, with the vast majority supporting its medical use, expressing openness to clinical use and learning more about them. However, objective knowledge of MDMA's risks and pharmacology was limited (Wang et al., 2024). Similarly, nurses reported generally positive attitudes towards psychedelic therapies, but reported low confidence in their knowledge, and ambivalence regarding legal status and policy change (Graefe et al., 2025). Palliative care professionals (e.g., oncologists, nurses, counsellors) expressed ethical caution but largely supported further exploration of psychedelic-assisted therapy for existential and end-of-life distress (Le & Shalman, 2024).

Most US counsellors support the use of psychedelics as an adjunct to psychotherapy, with only a little over 10% considering it risky for psychiatric conditions or cognitive impairment (Hearn et al., 2022). Human-service professionals (i.e., social workers, educators and counsellors) also agreed that supervised psychedelic use is safe and promising, though uncertainty regarding psychiatric and cognitive risks remained (Shuler & Keller-Dupree, 2025). Similarly, a survey of US clinical psychologists revealed generally favourable but cautious attitudes towards the therapeutic use of psychedelics, particularly concerning potential risks and appropriate clinical oversight (Davis et al., 2022).

In a large cross-national sample of European psychiatrists, attitudes towards psychedelics were moderately positive, with younger age, higher self-rated knowledge and previous experience with psychedelics associated with more favourable views (Žuljević et al., 2024). Similarly, a survey of Portuguese mental-health professionals, including psychologists, psychiatrists and psychiatry trainees, reported general openness to the clinical use of MDMA and interest in further professional training, alongside cautious support for its supervised medical application (Encantado et al., 2026).

Some evidence suggests that clinicians' attitudes towards psychedelic substances have shifted over time. Earlier research among US psychiatrists found that many viewed psychedelics as hazardous and supported their illegal recreational status (Barnett et al., 2018). However, a more recent follow-up survey reported a significant increase in positive attitudes towards their therapeutic use (Barnett et al., 2024).

A recent Australian study conducted after the legalisation of MDMA-AT in the country also reported generally positive attitudes among psychologists towards psychedelic and psychedelic-like substance use in therapy. Participants noted its potential to disrupt habitual thought patterns and promote cognitive transformation. While most were open to integrating psychedelics into therapy, they emphasised the need for clinician training, including opportunities for self-experience. Overall, psychedelics were viewed as potentially safer and more effective than current psychiatric medications (Negrine et al., 2025). Taken together, while research indicates that attitudes towards MDMA-AT among healthcare professionals are generally positive, reflecting an increasing acceptance of its therapeutic potential across clinical disciplines; clinicians also express concerns about safety, training and clinical implementation.

Less is known about how clinicians' personal experiences with MDMA may shape these attitudes. Many scholars and educational frameworks argue that personal experience with psychedelics, including MDMA, or intentional exposure to non-ordinary states of consciousness enhances a clinician's empathy, improves understanding of the psychedelic state and fosters a more effective therapeutic presence in psychedelic-assisted therapies (Fadiman, 2011; Nielson & Guss, 2018; Villiger, 2024). Supporting this, nearly half of surveyed Australian healthcare professionals reported past psychedelic use and indicated that these experiences contributed to their knowledge and openness to its clinical use, with most advocating for supervised psychedelic exposure as part of training programmes (Negrine et al., 2025). Comparable findings have been reported in the United States (Hearn et al., 2022; Wang et al., 2024) and Europe (Encantado et al., 2026) where prior psychedelic use was connected to more favourable attitudes. Reflecting this principle, the Multidisciplinary Association for Psychedelic Studies (MAPS) protocol includes an MDMA session for therapists as part of

their training (Mithoefer, 2017) emphasising the importance of first-hand experience.

Psychedelic research in Aotearoa New Zealand

Psychedelic research in Australia and Aotearoa New Zealand has progressed gradually since the onset of the psychedelic renaissance, beginning with early ibogaine studies in Aotearoa New Zealand (Noller et al., 2018) marking a cautious re-entry into the field and accelerating markedly over the past decade in both countries. Clinical trials testing substances like psilocybin, LSD and DMT are now underway or approved, focusing on conditions, such as treatment-resistant depression, anxiety and end-of-life distress (Mind Medicine Australia, 2024). Many of these studies also aim to include culturally informed approaches.

In Australia, MDMA-AT research is advancing rapidly, with pilot randomised controlled trials (RCTs), interventions for flood-related PTSD (Mind Medicine Australia, 2024), and legal prescribing of MDMA commencing in mid-2023 (Australian Government, 2023b). In contrast, Aotearoa New Zealand remains in an exploratory phase, with few MDMA-specific clinical trials formally registered to date and only a small number of clinical studies on psychedelic-assisted therapies conducted within the country's unique cultural context. One major barrier is the Misuse of Drugs Act 1975, which places most psychedelics into either Class A (very high risk) or Class B (high risk) categories (Ministry of Health, 1975), making clinical research difficult. MDMA, for example, is classified as a Class B substance despite being identified as the least harmful among 14 assessed drugs in the New Zealand Drug Harm Index (Ministry of Health, 2016), highlighting a discrepancy between its legislative classification and its assessed level of harm.

Despite legislative barriers, substantial non-clinical research exists, particularly in the form of surveys examining MDMA use and harm reduction. For example, Whelan et al. (2024a, 2024b) conducted a large quantitative survey of MDMA users in New Zealand, identifying patterns of use, motivations and harm-related experiences. Their qualitative study explored users' harm reduction strategies and knowledge, revealing the importance of peer support and trusted information sources (Whelan et al., 2024b). However, while clinical trials and public discourse continue to evolve, there is no sufficient knowledge about how mental health professionals in Aotearoa New Zealand perceive the use of MDMA. Findings from other countries may not generalise due to key contextual differences. Aotearoa New Zealand's unique cultural landscape, shaped by bicultural commitments under Te Tiriti o Waitangi, distinct drug legislation under the Misuse of Drugs Act 1975, and a smaller, more centralised mental health workforce, impacts both the accessibility and acceptability of emerging therapies.

MDMA-AT may soon be introduced in Aotearoa New Zealand, making it important to understand local clinicians' perspectives. Practicing psychologists are particularly relevant given their expertise supporting patients to process and integrate psychedelic experiences, their role in delivering evidence-based care and their role in upholding ethical standards. Exploring their views can help identify potential facilitators and barriers to implementation, as well as inform clinician training, within Aotearoa New Zealand's unique cultural and regulatory contexts.

The present exploratory study aimed to examine practicing psychologists' attitudes towards MDMA-AT and recreational MDMA use, with particular attention to how these views may be shaped by their personal experiences with MDMA. While a small but growing body of research has begun to explore clinicians' perspectives in other contexts, this study focuses specifically on psychologists in Aotearoa New Zealand. Understanding these perspectives may inform future research and guide the development of culturally responsive and effective implementation strategies in Aotearoa New Zealand, including implications for clinical practice, ethical oversight and policy development.

Methods

Participants and procedure

A convenience sample of 74 registered psychologists holding a current Annual Practicing Certificate, residing in Aotearoa New Zealand were recruited. All participants had at least 1 year of clinical experience. Of the 74 participants, 54 identified as female and 12 as male, and eight chose not to disclose their gender. Of the 67 participants indicating their age, 12 were aged 20–30-years, 40 were 31–50-years, and 15 were 50 years or older. Regarding ethnicity, 55 identified as European, 5 as Māori, 2 as other and 12 did not disclose. A total of 59 provided information on years of clinical experience, with a mean of 11.06 years ($SD = 8.16$, $Min = 1$, $Max = 30$).

Only those who answered the question regarding their own lifetime use of MDMA were included in the analysis for the current study; eight participants who did not answer this question were excluded from the final analysis, resulting in a final sample of 66 respondents. Participation was entirely voluntary, and ethical

approval for the study was granted prior to data collection by the leading author's institutional ethics review board (AUTEC 21/138). Participants were recruited via advertisements in newsletters, social media and a conference brochure. After clicking on the URL link or scanning QR code participants were taken to the anonymous survey hosted by Qualtrics. At the outset of each section, relevant definitions and instructions were provided. No identifying information was collected, and participants had the right to skip any question, select "unsure" or withdraw from the study at any time.

Measures

After the demographic information, participants were asked about registration status in Aotearoa New Zealand and years of clinical experience. Three questions asked about participants' familiarity with MDMA-AT, such as "To what degree are you informed about the current research relating to the therapeutic application of MDMA"? These items captured participants' perceived understanding and familiarity with MDMA-AT but were not intended as an objective test of accuracy. Two further questions asked about their interest in learning more about MDMA-AT (1 = strongly disagree to 7 = strongly agree). Two items explored the therapists' own experience using MDMA, one asked whether they have ever used the substance and the other asked about their experiences (1 = very positive to 7 = very negative).

The rest of the survey explored participants' attitudes towards the therapeutic and recreational uses of MDMA, drug use in general, New Zealand drug laws and their awareness of their clients' use of MDMA and other drugs. These attitudes were captured in a 7-point Likert scale. Examples of questions regarding participants' attitudes towards MDMA-AT and the effects of MDMA are "MDMA shows promise in the treatment of mental health disorders", "The therapeutic use of MDMA is unsafe" and "MDMA increases the risk for subsequent psychiatric disorders".

Additional questions about participants' attitudes towards recreational use of MDMA, other illicit substances and New Zealand drug laws included "A person should never take MDMA for any reason" and "The NZ laws against illicit drugs should be made more lenient". Two of the items in the survey were taken directly from the "General Drug Use" subscale of the Drug Attitudes Scale (Goodstadt et al., 1978): "People who use illicit drugs are a burden to society" and "There is nothing wrong with drugs if they make you feel good", and two were modifications of items from the same subscale: "MDMA can help improve relations among people" and "Illicit drug taking should not be accepted as a way of life".

Following the Likert-scale assessments of perceived risk of therapeutic and recreational use of MDMA, two qualitative open-ended questions were included to capture respondents' reasoning for their rating.

Data analysis

Data were analysed using SPSS (v.27). The analyses focused on descriptive statistics, including documenting proportions or the calculation of means and standard deviations. Independent-samples *t*-tests were utilised to determine significant differences ($p < .05$) in means between those who had, and those who had not, tried MDMA.

Results

Nearly half of the sample ($n = 32$) reported having previously used MDMA, while 34 participants (51.5%) indicated no prior experience. Participants with MDMA experience rated it on a 7-point Likert scale, ranging from extremely positive to extremely negative, with an average rating of 2.28 ($SD = 1.35$), suggesting generally positive experiences.

Interest in learning more about MDMA's therapeutic applications was similarly high in both groups: 91% among participants who had previously used MDMA and 94% among those who had not. Two-thirds of the 66 participants (65%) rated themselves as slightly informed ($n = 25$) or somewhat informed ($n = 18$) and 29% as not informed ($n = 19$), while only 6% as very informed ($n = 4$). Thirty (45%) participants indicated they were not at all prepared, 15 (23%) that they were slightly prepared and 8 (12%) were somewhat prepared, with 6 (9%) indicating that they were very prepared to respond to client questions about their use.

Table 1 presents abbreviated descriptions for those items in the survey that utilised a 7-point Likert scale (from strongly disagree to strongly agree), along with response frequencies. As the table shows, participants were generally positive about MDMA's therapeutic potential, with 65% agreeing that MDMA shows promise in the treatment of mental health disorders, and 68% agreeing that MDMA-AT could improve treatment if used with psychotherapy. However, 42% of the respondents at least somewhat agreed that MDMA is unsafe for therapeutic use, although only 23% thought that MDMA increases the risk for subsequent

Table 1. Response frequencies for 7-point Likert scale items.

	Response						
	Disagree				Agree		
Item*	1	2	3	4	5	6	7
MDMA shows promise in treatment of mental health disorders	0	1	1	25	8	21	14
Aware of clients illegally using MDMA as a treatment	6	8	0	11	8	16	9
Aware of clients illegally using other drugs as a treatment	4	5	2	9	8	14	17
I feel the therapeutic use of MDMA is unsafe	2	9	20	10	14	12	2
MDMA could improve treatment if used with psychotherapy	2	0	2	20	12	17	16
The therapeutic use of MDMA is a legitimate treatment	3	3	4	18	13	13	15
Occasional recreational use of MDMA is acceptable	5	10	2	14	11	19	7
MDMA can help improve relations among people	4	13	10	21	4	11	5
MDMA increases the risk for subsequent psychiatric disorders	5	9	16	23	5	8	2
The NZ laws against MDMA should be made more lenient	12	13	8	17	3	10	5
A person should never take MDMA for any reason	1	2	13	5	25	21	1
The NZ laws against illicit drugs should be made more lenient	2	6	5	14	8	16	17
There is nothing wrong with drugs if they make you feel good	11	31	8	8	8	1	1
People who use illicit drugs are a burden to society	2	23	19	3	12	7	2
Illicit drug taking should not be accepted as a way of life	3	13	15	6	17	8	6

*The wording of some items have been abbreviated to fit the table.

psychiatric disorders. The majority of the sample (77%) thought that a person should never take MDMA for any reason, although more than half (56%), agreed that occasional recreational use of MDMA was acceptable, and only 15% agreed that taking is okay simply because they make you feel good, and as per Figure 1, most judged MDMA usage to be less risky when used therapeutically than recreationally.

Experience of MDMA usage

Two-tailed independent samples *t*-tests were undertaken to probe for differences in attitudes towards the use of MDMA in therapy between those who had tried or not tried MDMA. Table 2 presents mean ratings towards items addressing attitudes towards MDMA use. Except for the three items probing awareness of client use and safety, all items are significantly different at the $\alpha = .05$ level.

As shown in Table 1, participants who had used MDMA reported significantly more positive attitudes towards its therapeutic effects than those without experience. Specifically, they agreed more that MDMA has potential in treating mental health disorders, could improve psychotherapy outcomes and represents a legitimate treatment ($ps < .01$). They

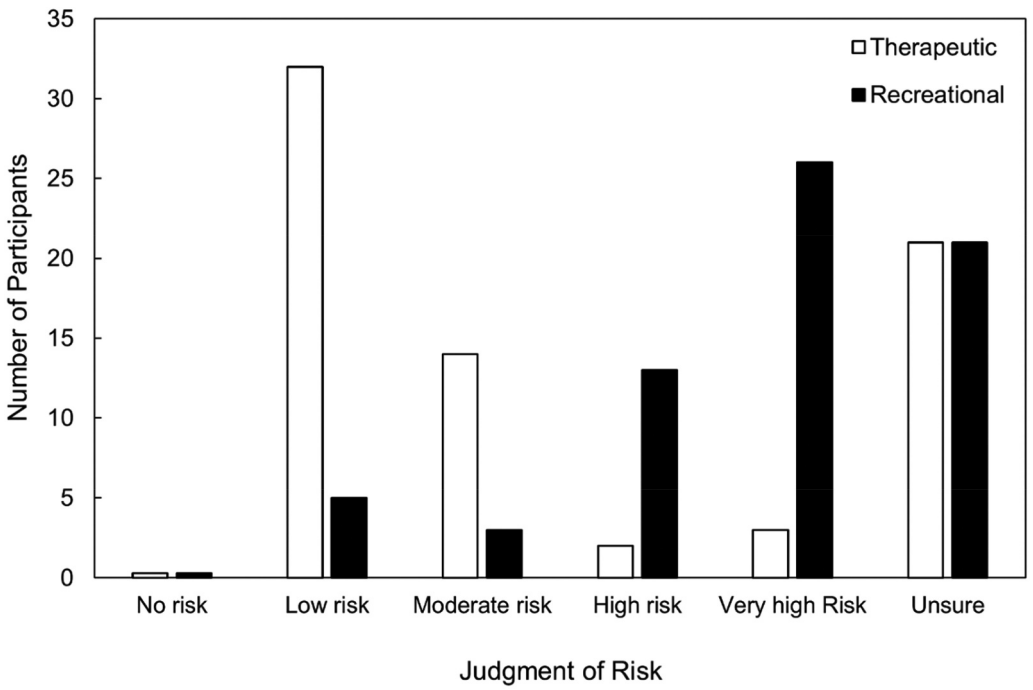

Figure 1. Number of participants as a function of risk category for both the therapeutic and recreational use of MDMA.

Table 2. Mean ratings for 7-point Likert scale items for the entire sample and for those who report having used or not used MDMA. The final column presents the *t*-statistic used to test whether the means of the used and not-used groups were significantly different.

		Have you used MDMA?		
	Pooled	No ($n = 34$)	Yes ($n = 32$)	
Item	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*t*
MDMA shows promise in treatment of mental health disorders	5.27 (1.26)	4.91 (1.22)	5.72 (1.23)	−2.686**
Aware of clients illegally using MDMA as a treatment	4.57 (1.97)	4.67 (1.94)	4.50 (2.11)	.302
Aware of clients illegally using other drugs as a treatment	5.07 (1.89)	5.13 (1.87)	5.08 (1.99)	.102
I feel the therapeutic use of MDMA is unsafe	4.00 (1.50)	4.29 (1.33)	3.71 (1.59)	1.594
MDMA could improve treatment if used with psychotherapy	5.25 (1.42)	4.88 (1.37)	5.81 (1.15)	−2.986***
The therapeutic use of MDMA is a legitimate treatment	4.94 (1.63)	4.62 (1.49)	5.47 (1.59)	−2.242**
Occasional recreational use of MDMA is acceptable	4.49 (1.82)	3.59 (1.67)	5.56 (1.29)	−5.342***
MDMA can help improve relations among people	4.10 (1.69)	3.18 (1.36)	5.19 (1.31)	−6.123***
MDMA increases the risk for subsequent psychiatric disorders	3.68 (1.47)	4.74 (1.38)	3.81 (1.40)	2.697**
The NZ laws against MDMA should be made more lenient	4.47 (1.90)	3.55 (1.74)	5.47 (1.55)	−4.49***
A person should never take MDMA for any reason	4.74 (1.29)	3.85 (1.31)	2.66 (0.87)	4.36***
The NZ laws against illicit drugs should be made more lenient	5.00 (1.75)	4.56 (1.71)	5.63 (1.52)	−2.673**
There is nothing wrong with drugs if they make you feel good	2.68 (1.41)	2.26 (1.26)	3.13 (1.43)	−2.593**
People who use illicit drugs are a burden to society	4.57 (1.57)	4.00 (1.76)	2.84 (1.77)	3.242***
Illicit drug taking should not be accepted as a way of life	3.99 (1.71)	4.68 (1.77)	3.38 (1.34)	3.353***

**$p < .01$, ***$p < .001$.

were also more likely to endorse the acceptability of occasional recreational use and the view that MDMA can improve interpersonal relationships ($ps < .001$). In contrast, participants without MDMA experience were more likely to agree that MDMA increases the risk of psychiatric disorders and that individuals should never use it ($ps < .01$).

Significant differences were also observed in broader drug attitudes. Participants with MDMA experience were more likely to support more lenient drug laws and endorse more permissive views towards drug use, whereas those without experience were more likely to view people who use drugs as a burden to society and to reject drug use as a way of life ($ps < .01$).

Further chi-square (c^2) testing of non-Likert scale items revealed no significant differences between the two groups on perceptions of therapeutic (c^2 (4) = 3.569, $p = .468$) and recreational (c^2 (3) = 7.202, $p = .126$) risk, how informed they are regarding MDMA-related research (c^2 (3) = 5.79, $p = .122$), ability to answer questions regarding MDMA-AT (c^2 (3) = 6.659, $p = .084$) or the desire to learn more about the therapeutic applications of MDMA (c^2 (3) = 2.422, $p = .298$).

Discussion

This study examined practicing psychologists' attitudes towards MDMA-AT and recreational MDMA use, focusing on the influence of personal and professional experience. Overall, respondents held generally positive views of MDMA-AT. Findings suggest that prior MDMA exposure may significantly shape clinicians' perceptions of their therapeutic potential.

Psychologists' familiarity with MDMA-Assisted therapy (MDMA-AT)

The study found that psychologists' familiarity with MDMA-AT varies, with few considering themselves well-informed (6%) and most reporting minimal to no knowledge. Similarly, one-third (31%) felt unprepared to respond to client questions. Yet over 90% expressed strong interest in learning more, and 65% recognised the promise of MDMA research for mental health treatment, particularly for PTSD, with less awareness of other applications.

General optimism about MDMA-AT, limited knowledge, and a strong willingness to learn more aligns with previous findings among healthcare and mental health professionals (Encantado et al., 2026; Graefe et al., 2025; Hearn et al., 2022; Wang et al., 2024; Wells et al., 2024). In Aotearoa New Zealand, this educational gap reflects the lack of emphasis on psychedelic-assisted therapies (including MDMA-AT) in accredited psychology programmes, which predominantly focus on cognitive-behavioural approaches, only occasionally touching upon psychedelic therapies. Additionally, the absence of accredited psychedelic-assisted therapy training in Aotearoa New Zealand further contributes to this gap.

Evaluating psychological intervention requires more than understanding risks; mental health professionals must form realistic expectations grounded in scientific evidence (New Zealand Psychologists Board, 2006). In our study, over half of the participants perceived the risk of MDMA-AT to be low to medium, consistent with research demonstrating that it is safe, effective, non-toxic and non-addictive in controlled settings, with risks

mostly stemming from unsupervised use (Miazzi et al., 2025; Wolfgang et al., 2025). Nevertheless, almost half (42%) of respondents viewed it as at least somewhat unsafe for therapeutic use, and a quarter (23%) believed it could increase the risk of subsequent psychiatric disorders, indicating that safety concerns remain for a notable minority of psychologist, likely reflecting their limited objective knowledge of MDMA's risks and pharmacology (Wang et al., 2024).

Qualitative data exploring psychologists' risk-evaluation revealed three common themes. The most common concerned the controlled clinical setting and the therapeutic and medical support that mitigates many inherent risks. The second focused on the dose and potency of MDMA used in therapy, while the third emphasised potential biophysical harms, such as contraindicated conditions (e.g., heart problems). These findings generally align with Wang et al. (2024), whose participants also believed that MDMA was safe in clinical settings, while noting similar concerns about contraindications.

Taken together, the results suggest that despite lacking formal MDMA-AT training, registered psychologists in Aotearoa New Zealand hold cautiously optimistic views, indicating both a need and readiness for targeted professional education in this emerging field.

Psychologists' own experience with MDMA

MDMA use is prevalent worldwide, particularly in Western countries, with growing rates in non-Western regions (Moore et al., 2019). Recreational MDMA use is also common in Aotearoa New Zealand (Whelan et al., 2024a); wastewater surveillance indicates approximately 8.5 kg of MDMA consumed nationally per week during July–September 2024 (New Zealand Police, 2024), equivalent to roughly 68,000 clinical doses. Given this prevalence, it is unsurprising that nearly half of the surveyed psychologists (48.5%) indicated prior personal use.

In our study, psychologists who reported prior MDMA use, rated the experience generally positive, consistent with known MDMA effects (Whelan et al., 2024a), such as feelings of emotional closeness, trust and openness with others (Bedi et al., 2010; Hysek et al., 2014), a euphoric, calm and positive emotional state (Mithoefer et al., 2011), reduced fear and defensiveness (Carhart-Harris et al., 2014) and increased self-awareness and insight (Wagner et al., 2017).

Attitudes towards MDMA-Assisted Therapy (MDMA-AT)

In our study, psychologists with personal MDMA experience generally exhibited more positive attitudes towards their therapeutic use, consistent with previous findings among health professionals (Encantado et al., 2026; Hearn et al., 2022; Wang et al., 2024), with Wang et al. (2024) reporting personal psychedelic use as a strong predictor of openness to clinical applications. One possible explanation is that these therapists had first-hand experiences of MDMA's positive effects and deepened understanding of how MDMA can be used therapeutically, supporting more informed perspectives on MDMA-AT.

However, it is also possible that psychologists with positive pre-existing attitudes were more likely to try MDMA, as suggested by several scholars (Fadiman, 2011; Mithoefer, 2017; Nielson & Guss, 2018; Villiger, 2024), while those with greater fear and stigma were less likely to do so. Such negative perceptions are often reinforced by the cultural context of prohibition, which classifies certain substances as dangerous without rigorous scientific evaluation. Additionally, limited education on psychedelics further hinders some psychologists' ability to engage with the topic professionally.

Attitudes towards risk of subsequent psychosis

Even though no differences between groups were observed when assessing risk more generally, psychologists without personal experience using MDMA were more likely to be concerned about the risk of subsequent psychiatric disorders. One possible explanation is that historically, classic psychedelics were described as *psychotomimetic*, referring to effects resembling aspects of psychosis (Osmond, 1957). Although MDMA is not a classic psychedelic, mental health professionals with limited or less nuanced knowledge of MDMA may rely on these historical associations when evaluating the risk of psychosis.

Controlled clinical trials have not documented psychotic episodes, and MDMA is generally well tolerated with adverse events carefully monitored (Mithoefer et al., 2018). An ongoing study (Bershad, 2025) is currently assessing the tolerability of MDMA in individuals with schizophrenia, which is expected to provide more insight into this issue.

Attitudes towards MDMA and its recreational use

Psychologists with personal MDMA experience were significantly more likely to endorse its positive effects, such as promoting prosocial behaviour and fostering a pleasant emotional state which contribute not only

to its therapeutic potential but also to its appeal as a recreational substance.

In our study, these psychologists tended to be more accepting of recreational MDMA use and supportive of liberal drug policies, such as more lenient laws towards illicit substances. Personal experience may influence attitudes not only towards its therapeutic potential but also its recreational use. First-hand experience might challenge existing stigmas and foster more supportive views on MDMA regulation. This aligns with the idea that direct engagement with a behaviour can reshape beliefs (Albarracin & Wyer, 2000), encouraging a more evidence-based approach to drug policy. At the same time, it is possible that therapists who already held positive attitudes towards recreational substance use were more likely to try MDMA in the first place.

Attitudes towards illicit drug use and drug users

Not surprisingly, psychologists who had tried MDMA tended to be significantly less judgemental towards illicit drug use and users, while those who reported never using MDMA generally held more negative views. This divergence has important clinical implications, as negative attitudes towards individuals who use illicit substances can hinder effective practice, particularly in harm reduction contexts. Effective harm reduction relies on evidence-based interventions and a non-judgemental therapeutic stance (Rigg & Sharp, 2018; Ritter & Cameron, 2006), showing how important therapist attitudes are in providing supportive and unbiased care. This is especially relevant given that, in a recent survey of 1,221 psychedelic users, only 58% disclosed their use to a psychiatric care provider, primarily when they trusted the provider's competence, while stigma, legal concerns and perceived provider ignorance were key barriers to disclosure (Boehnke et al., 2023). This is especially problematic, as trauma survivors with PTSD often use illicit substances as a form of self-medication to manage psychological distress (Benton et al., 2012; Maté, 2010), suggesting the importance of clinicians being prepared to discuss clients' substance use openly and apply appropriate harm-reduction strategies when working with trauma-affected populations.

Implications for clinical practice

Clinicians, particularly practicing psychologists, play a central role in the safe and responsible integration of MDMA-AT into mental health practice. Psychologists' personal experience and attitudes towards MDMA influence their perceptions of both therapeutic and recreational use. More positive attitudes correlate with lower judgement towards clients who use illicit substances, while negative attitudes may create barriers to effective treatment. Therapists who overestimate the psychiatric risks of MDMA may be less likely to refer clients to MDMA-AT clinics, promote MDMA-AT 's use in psychology, potentially limiting client's access. Positive, knowledgeable and non-judgemental attitudes can also foster trust, increasing the likelihood that clients disclose substance use, which is critical for safe and effective clinical care.

Strengths and limitations

This study offers preliminary insights into how registered psychologists in Aotearoa New Zealand perceive MDMA-AT, a topic that has received limited attention in this professional context. By including items on both personal experience and attitudes, the survey captured a nuanced understanding of factors shaping psychologists' perspectives. Focusing on currently practicing psychologists enhance the practical relevance of the findings, reflecting the perspectives of those actively engaged in clinical work. Additional strengths include efficiently reaching a geographically diverse population and the potential to identify patterns and predictors that can inform future, more targeted research and training initiatives.

At the same time, several limitations must be acknowledged. The cross-sectional design limits the ability to draw causal inferences and provides only a snapshot of attitudes at one point in time, without capturing how perspectives might evolve as professional discourse, public awareness and emerging research on MDMA-AT continue to develop. While anonymity likely reduced social desirability bias, subjective ratings of experiences might have been affected by recall bias. Similarly, self-reported knowledge may not accurately reflect actual understanding. Some survey questions in this study were relatively general, which may have limited the precision with which participants' attitudes and experiences were captured. A further note is that while the survey enquired about MDMA, participants may have answered in relation to experiences with ecstasy, which typically is not pure MDMA.

The use of a convenience sample likely introduced self-selection bias, as psychologists with a strong interest in MDMA or psychedelic-assisted therapies may have been more likely to participate, which can make the reported attitudes appear more positive than those of the broader population of practicing psychologists. Additionally, with 74 participants, the sample is relatively small and may not fully represent all registered psychologists in Aotearoa New Zealand. In particular, the low number of Māori participants limits the cultural representativeness of the findings.

Future research

Building on these findings, future research should examine how psychologists' personal and professional experiences shape attitudes towards MDMA-AT, and how these attitudes influence clinical decision-making. Longitudinal or experimental studies could assess changes in attitudes among psychologists with no prior MDMA experience, for example, before and after targeted training or supervised exposure, to determine whether direct experience alters perceptions of risk and therapeutic potential. Broader surveys should also include other healthcare professionals involved in MDMA-AT delivery, such as psychiatrists, mental health nurses, psychotherapists and social workers, to capture multidisciplinary perspectives.

In-depth qualitative interviews and vignette-based studies could provide context-specific insights into ethical concerns, perceived barriers, and clinical decision-making. Examining the accuracy and depth of knowledge about MDMA-AT, and its relationship to attitudes, may help identify misconceptions that hinder adoption. Importantly, future research should prioritise the inclusion of Māori participants and other underrepresented groups to ensure findings are culturally relevant and generalisable, supporting the development of training and implementation strategies that are safe, effective and culturally responsive.

Conclusions

By examining the relationship between psychologists' experiences with MDMA and their attitudes towards both MDMA-AT and recreational use, this study contributes to discussions on how clinician perspectives may shape broader discourse on psychedelic substances. Psychologists expressed cautious optimism alongside concerns about safety, clinical implementation and training needs. The findings suggest that personal and professional exposure to MDMA may influence perceptions of its therapeutic potential as well as views on non-clinical use.

These results emphasise the importance of ongoing discussion around the clinical use and regulation of MDMA, as well as the need for formal continuing education. As research on MDMA-AT expands, understanding clinicians' perspectives may help inform thoughtful, evidence-based policy and implementation in Aotearoa New Zealand.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

No funding was received for conducting this study.

ORCID

Daniel Shepherd http://orcid.org/0000-0001-7089-7130

Data availability statement

Due to ethical restrictions the data are not publicly available but can be obtained from the corresponding author upon reasonable request.

References

Accident Compensation Corporation. (2022). *Supporting a changing AOTERAOA* (Report). Te Kaporeihana Āwhina Hunga Whara Accident Compensation Corporation. https://www.acc.co.nz/assets/corporate-documents/acc8430-acc-annual-report-2022.pdf

Albarracin, D. & Wyer, R. S., Jr. (2000). The cognitive impact of past behavior: Influences on beliefs, attitudes, and future behavioral decisions. *Journal of Personality & Social Psychology*, *79*(1), 5. https://doi.org/10.1037/0022-3514.79.1.5

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

Anderson, B. T., Danforth, A. L., & Grob, C. S. (2020). Psychedelic medicine: Safety and ethical concerns. *Lancet Psychiatry*, *7*(10), 829–830. https://doi.org/10.1016/S2215-0366(20)30146-2

Australian Government. (2023a). *Change to classification of psilocybin and MDMA to enable prescribing by authorised psychiatrists*. https://www.tga.gov.au/news/media-releases/change-classification-psilocybin-and-mdma-enable-prescribing-authorised-psychiatrists

Australian Government. (2023b). *Update on MDMA and psilocybin access and safeguards from 1 July 2023*. https://www.tga.gov.au/news/news/update-mdma-and-psilocybin-access-and-safeguards-1-july-2023

Avanceña, A. L. V., Kahn, J. G., & Marseille, E. (2022). The costs and health benefits of expanded access to MDMA-assisted therapy for chronic and severe PTSD in the USA: A modeling study. *Clinical Drug Investigation*, *42*(3), 243–252. https://doi.org/10.1007/s40261-022-01122-0

Bahji, A., Forsyth, A., Groll, D., & Hawken, E. R. (2020). Efficacy of 3, 4-methylenedioxymethamphetamine (MDMA)-assisted psychotherapy for posttraumatic stress disorder: A systematic review and meta-analysis. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, *96*, 109735. https://doi.org/10.1016/j.pnpbp.2019.109735

Barnett, B. S., Arakelian, M., Beebe, D., Ontko, J., Riegal, C., Siu, W. O., Weleff, J., & Pope, H. G. (2024). American psychiatrists' opinions about classic hallucinogens and their potential therapeutic applications: A 7-year follow-up survey. *Psychedelic Medicine*, *2*(1), 1–9. https://doi.org/10.1089/psymed.2023.0036

Barnett, B. S., Siu, W. O., & Pope, H. G. J. (2018). A survey of American psychiatrists' attitudes toward classic hallucinogens. *Journal of Nervous and Mental Disease*, *206*(6), 476–480. https://doi.org/10.1097/nmd.0000000000000828

Barone, W., Mitsunaga-Whitten, M., Blaustein, L. O., Perl, P., Swank, M., & Swift, T. C. (2022). Facing death, returning to life: A qualitative analysis of MDMA-assisted therapy for anxiety associated with life-threatening illness [original research]. *Frontiers in Psychiatry*, *13*. https://doi.org/10.3389/fpsyt.2022.944849

Bedi, G., Hyman, D., & De Wit, H. (2010). Is ecstasy an "empathogen"? Effects of ±3, 4-methylenedioxymethamphetamine on prosocial feelings and identification of emotional States in others. *Biological Psychiatry*, *68*(12), 1134–1140. https://doi.org/10.1016/j.biopsych.2010.08.003

Benton, D. M., Deering, D. E. A., & Adamson, S. J. (2012). Treating co-occurring posttraumatic stress disorder and substance use disorders in an outpatient setting in New Zealand. *New Zealand Journal of Psychology*, *41*(1), 30–37.

Bershad, A. (2025). *Tolerability of MDMA in schizophrenia (TMS)*. https://clinicaltrials.gov/study/NCT05770375

Bhagavan, C., Glue, P., Evans, W., Reynolds, L., Turner, T., King, C., Russell, B. R., Morunga, E., Mills, J. L., Layton, G., & Menkes, D. B. (2024). Effect of MDMA-assisted therapy on mood and anxiety symptoms in advanced-stage cancer (EMMAC): Study protocol for a double-blind, randomised controlled trial. *Trials*, *25*(1), 336. https://doi.org/10.1186/s13063-024-08174-x

Bhatt, S. R., Armstrong, M., Parker, T., Maviglia, M., Kass, R., Leeman, L., Romo, P., & Ziedonis, D. (2022). Psychedelic therapies at the crossroads of trauma and substance use: Historical perspectives and future directions, taking a lead from New Mexico. *Frontiers in Pharmacology*, *13*. https://doi.org/10.3389/fphar.2022.905753

Boehnke, K. F., Cox, K., Weston, C., Herberholz, M., Glynos, N., Kolbman, N., Fields, C. W., Barron, J., & Kruger, D. J. (2023). Slouching towards engagement: Interactions between people using psychedelics naturalistically and their healthcare providers. *Frontiers in Psychiatry*, *14*. https://doi.org/10.3389/fpsyt.2023.1224551

Brewerton, T. D., Wang, J. B., Lafrance, A., Pamplin, C., Mithoefer, M., Yazar-Klosinki, B., Emerson, A., & Doblin, R. (2022). MDMA-assisted therapy significantly reduces eating disorder symptoms in a randomized placebo-controlled trial of adults with severe PTSD. *Journal of Psychiatric Research*, *149*, 128–135. https://doi.org/10.1016/j.jpsychires.2022.03.008

Carhart-Harris, R. L., Wall, M. B., Erritzoe, D., Kaelen, M., Ferguson, B., De Meer, I., Tanner, M., Bloomfield, M., Williams, T. M., Bolstridge, M., Stewart, L., Morgan, C. J., Newbould, R. D., Feilding, A., Curran, H. V., & Nutt, D. J. (2014). The effect of acutely administered MDMA on subjective and BOLD-fMRI responses to favourite and worst autobiographical memories. *The International Journal of Neuropsychopharmacology*, *17*(4), 527–540. https://doi.org/10.1017/s1461145713001405

Chiruta, V., Zemla, P. K., Miller, P., Santarossa, N., & Hannan, J. A. (2021). Critique of the Royal Australian and New Zealand college of psychiatrists psychedelic therapy clinical memorandum, dated May 2020. *Journal of Medical and Health Studies*, *2*(2), 145–160. https://doi.org/10.32996/jmhs.2021.2.2.18

Costa, G. & Gołembiowska, K. (2022). Neurotoxicity of MDMA: Main effects and mechanisms. *Experimental Neurology*, *347*, 113894. https://doi.org/10.1016/j.expneurol.2021.113894

Cuijpers, P., Miguel, C., Ciharova, M., Harrer, M., Basic, D., Cristea, I. A., de Ponti, N., Driessen, E., Hamblen, J., Larsen, S. E., Matbouriahi, M., Papola, D., Pauley, D., Plessen, C. Y., Pfund, R. A., Setkowski, K., Schnurr, P. P., van Ballegooijen, W., Wang, Y., & Karyotaki, E. (2024). Absolute and relative outcomes of psychotherapies for eight mental disorders: A systematic review and meta-analysis. *World Psychiatry*, *23*(2), 267–275. https://doi.org/10.1002/wps.21203

Danforth, A. L. (2019). Embracing neurodiversity in psychedelic science: A mixed-methods inquiry into the MDMA experiences of autistic adults. *Journal of Psychoactive Drugs*, *51*(2), 146–154. https://doi.org/10.1080/02791072.2019.1587116

Danforth, A. L., Grob, C. S., Struble, C., Feduccia, A. A., Walker, N., Jerome, L., Yazar-Klosinski, B., & Emerson, A. (2018). Reduction in social anxiety after MDMA-assisted psychotherapy with autistic adults: A randomized, double-blind, placebo-controlled pilot study. *Psychopharmacology*, *235*(11), 3137–3148. https://doi.org/10.1007/s00213-018-5010-9

Davis, A. K., Agin-Liebes, G., España, M., Pilecki, B., & Luoma, J. (2022). Attitudes and beliefs about the therapeutic use of psychedelic drugs among psychologists in the United States. *Journal of Psychoactive Drugs*, *54*(4), 309–318. https://doi.org/10.1080/02791072.2021.1971343

Doblin, R. (2002). A clinical plan for MDMA (ecstasy) in the treatment of posttraumatic stress disorder (PTSD): Partnering with the FDA. *Journal of Psychoactive Drugs*, *34*(2), 185–194. https://doi.org/10.1080/02791072.2002.10399952

Doblin, R., Greer, G., Holland, J., Jerome, L., Mithoefer, M. C., & Sessa, B. (2014). A reconsideration and response to Parrott AC (2013) "Human psychobiology of MDMA or 'ecstasy': An overview of 25 years of empirical research". *Human Psychopharmacology: Clinical & Experimental*, *29*(2), 105–108. https://doi.org/10.1002/hup.2389

Drevin, G., Pena-Martin, M., Bauduin, A., Baudriller, A., Briet, M., & Abbara, C. (2024). Pharmacogenomics of 3, 4-methylenedioxymethamphetamine (MDMA): A narrative review of the literature. *Pharmaceutics*, *16*(8), 1091. https://doi.org/10.3390/pharmaceutics16081091

Dumont, G. J. H., Sweep, F. C. G. J., van der Steen, R., Hermsen, R., Donders, A. R. T., Touw, D. J., van Gerven, J. M. A., Buitelaar, J. K., & Verkes, R. J. (2009). Increased oxytocin concentrations and prosocial feelings in humans after ecstasy (3, 4-methylenedioxymethamphetamine) administration. *Social Neuroscience*, *4*(4), 359–366. https://doi.org/10.1080/17470910802649470

Encantado, J., Carvalho, L. C., Mota, P., Cunha, C., Garcia-Romeu, A., Johnson, M. W., & Teixeira, P. J. (2026). Attitudes and perceptions of Portuguese mental health professionals on the therapeutic use of psilocybin and methylenedioxymethamphetamine (MDMA). *Professional Psychology, Research and Practice*, *57*(1), 68–80. https://doi.org/10.1037/pro0000664

Fadiman, J. (2011). *The psychedelic explorer's guide: Safe, therapeutic, and sacred journeys*. Simon and Schuster.

Feduccia, A., Agin-Liebes, G., Price, C. M., Grinsell, N., Paradise, S., & Rabin, D. M. (2023). The need for establishing best practices and gold standards in psychedelic medicine. *Journal of Affective Disorders*, *332*, 47–54. https://doi.org/10.1016/j.jad.2023.03.083

Goodstadt, M. S., Cook, G., Magid, S., & Gruson, V. (1978). The drug attitudes scale (DAS): Its development and evaluation. *The International Journal of the Addictions*, *13*(8), 1307–1317. https://doi.org/10.3109/10826087809039344

Graefe, A. C., Weirick, M. E., Harpin, S. B., Dorsen, C., & Porta, C. M. (2025). Registered nurses' knowledge and attitudes towards psychedelics in healthcare: Statewide survey results. *Journal of Psychiatric & Mental Health Nursing*, *32*(3), 634–642. https://doi.org/10.1111/jpm.13141

Gutner, C. A., Gallagher, M. W., Baker, A. S., Sloan, D. M., & Resick, P. A. (2016). Time course of treatment dropout in cognitive–behavioral therapies for posttraumatic stress disorder. *Psychological Trauma: Theory, Research, Practice, and Policy*, *8*(1), 115–121. https://doi.org/10.1037/tra0000062

Haggarty, C. J., Bershad, A. K., Kumar, M. K., Lee, R., & de Wit, H. (2024). The 3, 4-methylenedioxymethamphetamine enhances early visual processing for salient socio-emotional stimuli. *The European Journal of Neuroscience*, *59*(12), 3224–3235. https://doi.org/10.1111/ejn.16346

Hearn, B. G., Brubaker, M. D., & Richardson, G. (2022). Counselors' attitudes toward psychedelics and their use in therapy. *Journal of Counseling and Development*, *100*(4), 364–373. https://doi.org/10.1002/jcad.12429

Højlund, M. Kafali, H. Y. Kırmızı, B. Fusar-Poli, P. Correll, C. U. Cortese, S. Sabé, M. Fiedorowicz, J. Saraf, G. Zein, J. Berk, M. Husain, M. I. Rosenblat, J. D. Rubaiyat, R. Corace, K. Wong, S. Hatcher, S. Kaluzienski, M.Yatham, L. N. … Solmi, F. (2025). Efficacy, all-cause discontinuation, and safety of serotonergic psychedelics and MDMA to treat mental disorders: A living systematic review with meta-analysis. *European Neuropsychopharmacology*, *101*, 41–55. https://doi.org/10.1016/j.euroneuro.2025.09.011

Hoskins, M. D., Sinnerton, R., Nakamura, A., Underwood, J. F. G., Slater, A., Lewis, C., Roberts, N. P., Bisson, J. I., Lee, M., & Clarke, L. (2021). Pharmacological-assisted psychotherapy for post traumatic stress disorder: A systematic review and meta-analysis. *European Journal of Psychotraumatology*, *12*(1), 1853379. https://doi.org/10.1080/20008198.2020.1853379

Hysek, C. M., Domes, G., & Liechti, M. E. (2012). MDMA enhances "mind reading" of positive emotions and impairs "mind reading" of negative emotions. *Psychopharmacology*, *222*(2), 293–302. https://doi.org/10.1007/s00213-012-2645-9

Hysek, C. M., Simmler, L. D., Schillinger, N., Meyer, N., Schmid, Y., Donzelli, M., Grouzmann, E., & Liechti, M. E. (2014). Pharmacokinetic and pharmacodynamic effects of methylphenidate and MDMA administered alone or in combination. *The International Journal of Neuropsychopharmacology*, *17*(3), 371–381. https://doi.org/10.1017/s1461145713001132

Illingworth, B. J., Lewis, D. J., Lambarth, A. T., Stocking, K., Duffy, J. M., Jelen, L. A., & Rucker, J. J. (2021). A comparison of MDMA-assisted psychotherapy to non-assisted psychotherapy in treatment-resistant PTSD: A systematic review and meta-analysis. *Journal of Psychopharmacology*, *35*(5), 501–511. https://doi.org/10.1177/0269881120965915

Kamilar-Britt, P. & Bedi, G. (2015). The prosocial effects of 3, 4-methylenedioxymethamphetamine (MDMA): Controlled studies in humans and laboratory animals. *Neuroscience and Biobehavioral Reviews*, *57*, 433–446. https://doi.org/10.1016/j.neubiorev.2015.08.016

Kisely, S. (2023). The down-scheduling of MDMA and psilocybin(e): Too fast and too soon. *The Australian and New Zealand Journal of Psychiatry*, *57*(7), 933–934. https://doi.org/10.1177/00048674231174171

Koenen, K. C. Ratanatharathorn, A. Ng, L. McLaughlin, K. A. Bromet, E. J. Stein, D. J. Karam, E. G. Meron Ruscio, A. Benjet, C. Scott, K. Atwoli, L. Petukhova, M. Lim, C. C. W. Aguilar-Gaxiola, S. Al-Hamzawi, A. Alonso, J. Bunting, B. Ciutan, M.de Girolamo, G. … Xavier, M. (2017). Posttraumatic stress disorder in the world mental health surveys. *Psychological Medicine*, *47*(13), 2260–2274. https://doi.org/10.1017/s0033291717000708

Le, J. & Shalman, D. (2024). Palliative care provider attitudes toward psychedelics: A survey in an integrated health system. *Journal of Pain and Symptom Management*, *67*(5), e722–e723. https://doi.org/10.1016/j.jpainsymman.2024.02.207

Maples-Keller, J. L., Norrholm, S. D., Burton, M., Reiff, C., Coghlan, C., Jovanovic, T., Yasinski, C., Jarboe, K., Rakofsky, J., Rauch, S., Dunlop, B. W., & Rothbaum, B. O. (2022). A randomized controlled trial of 3, 4-methylenedioxymethamphetamine (MDMA) and fear extinction retention in healthy adults. *Journal of Psychopharmacology*, *36*(3), 368–377. https://doi.org/10.1177/02698811211069124

Maté, G. (2010). *In the realm of hungry ghosts: Close encounters with addiction*. North Atlantic Books.

Miazzi, R., Cestonaro, C., Righetto, S., Petroni, G., & Terranova, C. (2025). Psychological and neuropsychological effects of MDMA use during adolescence: A structured review. *Frontiers in Psychiatry*, *16*, Article 1644599. https://doi.org/10.3389/fpsyt.2025.1644599

Mind Medicine Australia. (2024). *An overview of current trials in Australia and New Zealand*. https://mindmedicineaustralia.org.au/clinical-trials/

Ministry of Health. (1975). *Misuse of drugs*. https://www.legislation.govt.nz/act/public/1975/0116/latest/DLM436101.html

Ministry of Health. (2016). *Research report: The New Zealand drug harm index 2016*. Ministry of Health. https://www.health.govt.nz/publication/research-report-new-zealand-drug-harm-index-2016

Mitchell, J. M., Ot'alora, G., Van Der Kolk, M. B., Shannon, S., Bogenschutz, M., Gelfand, Y., Paleos, C., Nicholas, C. R., Quevedo, S., Balliett, B., Hamilton, S., Mithoefer, M., Kleiman, S., Parker-Guilbert, K., Tzarfaty, K., Harrison, C., De Boer, A., Doblin, R., Yazar-Klosinski, B., & Emerson, A. (2023). MDMA-assisted therapy for moderate to severe PTSD: A randomized, placebo-controlled phase 3 trial. *Nature Medicine*, *29*(10), 2473–2480. https://doi.org/10.1038/s41591-023-02565-4

Mitchell, J. M. Bogenschutz, M. Lilienstein, A. Harrison, C. Kleiman, S. Parker-Guilbert, K. Ot'alora, G. Garas, M. Paleos, W. Gorman, C. Nicholas, I. Mithoefer, C. Carlin, M. Poulter, S. Mithoefer, B. Quevedo, A. Wells, S. Klaire, G.S,

S. … Doblin, R. (2021). MDMA-assisted therapy for severe PTSD: A randomized, double-blind, placebo-controlled phase 3 study. *Nature Medicine*, *27*(6), 1025–1033. https://doi.org/10.1038/s41591-021-01336-3

Mitchell, J. M. Bogenschutz, M. Lilienstein, A. Harrison, C. Kleiman, S. Parker-Guilbert, K. Ot'alora, G. Garas, M. Paleos, W. Gorman, C. Nicholas, I. Mithoefer, C. Carlin, M. Poulter, S. Mithoefer, B. Quevedo, A. Wells, S. Klaire, G.S, S. … Doblin, R. (2023). MDMA-assisted therapy for severe PTSD: A randomized, double-blind, placebo-controlled phase 3 study. *Focus*, *21*(3), 315–328. https://doi.org/10.1176/appi.focus.23021011

Mithoefer, M. C. (2017). *A manual for MDMA-assisted psychotherapy in the treatment of posttraumatic stress disorder; version 8.1*. Multidisciplinary Association for Psychedelic Studies, Issue. https://maps.org/wp-content/uploads/2022/05/MDMA-Assisted-Psychotherapy-Treatment-Manual-V8.1-22AUG2017.pdf

Mithoefer, M. C., Mithoefer, A. T., Feduccia, A. A., Jerome, L., Wagner, M., Wymer, J., Holland, J., Hamilton, S., Yazar-Klosinski, B., Emerson, A., & Doblin, R. (2018). 3, 4-methylenedioxymethamphetamine (MDMA)-assisted psychotherapy for post-traumatic stress disorder in military veterans, firefighters, and police officers: A randomised, double-blind, dose-response, phase 2 clinical trial. *Lancet Psychiatry*, *5*(6), 486–497. https://doi.org/10.1016/S2215-0366(18)30135-4

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

Molla, H., Lee, R., Lyubomirsky, S., & de Wit, H. (2023). Drug-induced social connection: Both MDMA and methamphetamine increase feelings of connectedness during controlled dyadic conversations. *Scientific Reports*, *13*(1), 15846. https://doi.org/10.1038/s41598-023-43156-0

Moore, K., Wells, H., & Feilding, A. (2019). *Roadmaps to regulation: MDMA*. Beckley Foundation Press. https://www.beckleyfoundation.org/wp-content/uploads/2019/12/MDMA_Roadmap_To_Regulation-Digital-Copy-0512.pdf

Multidisciplinary Association for Psychedelic Studies. (2019). *MDMA investigator's brochure* (11th ed.). https://maps.org/wp-content/uploads/2021/08/MDMA-Investigator-BrochureIB-11thEdition-MAPS-2019-07-10-2.pdf.

Negrine, J. J., Puljević, C., Ferris, J., Liknaitzky, P., Perlman, C., & Piatkowski, T. (2025). Australian psychologists' attitudes towards psychedelic-assisted therapy and training following a world-first drug down-scheduling. *Drug and Alcohol Review*, *44*(1), 336–346. https://doi.org/10.1111/dar.13973

New Zealand Government. (2018). *He Ara Oranga: Report of the government inquiry into mental health and addiction* (0994124538). https://mentalhealth.inquiry.govt.nz/assets/Summary-reports/He-Ara-Oranga.pdf

New Zealand Police. (2024). *Wastewater drug testing in New Zealand: National overview*. https://www.police.govt.nz/sites/default/files/publications/wastewater-results-quarter-3-2024.pdf

New Zealand Psychologists Board. (2006). *Core competencies*.

Nielson, E. M. & Guss, J. (2018). The influence of therapists' first-hand experience with psychedelics on psychedelic-assisted psychotherapy research and therapist training. *Journal of Psychedelic Studies*, *2*(2), 64–73. https://doi.org/10.1556/2054.2018.009

Noller, G. E., Frampton, C. M., & Yazar-Klosinski, B. (2018). Ibogaine treatment outcomes for opioid dependence from a twelve-month follow-up observational study. *The American Journal of Drug and Alcohol Abuse*, *44*(1), 37–46. https://doi.org/10.1080/00952990.2017.1310218

Office of the Auditor-General. (2024). *Taking action on youth mental health*. https://oag.parliament.nz/2024/youth-mental-health

Osmond, H. (1957). A review of the clinical effects of psychotomimetic agents. *Annals of the New York Academy of Sciences*, *66*(3), 418–434. https://doi.org/10.1111/j.1749-6632.1957.tb40738.x

Parekh, S. V., Adams, L. O., Barkell, G. A., & Lysle, D. T. (2022). MDMA administration attenuates hippocampal IL-1β immunoreactivity and subsequent stress-enhanced fear learning: An animal model of PTSD. *Brain, Behavior, & Immunity - Health*, *26*, 100542. https://doi.org/10.1016/j.bbih.2022.100542

Perivoliotis, D., Knopp, K., Remick, S., Kaigle, A., Stauffer, C. S., Khalifian, C., Wachsman, T. R., Chargin, B. E., Bismark, A. W., Alam, A., & Morland, L. (2025). Bringing MDMA-assisted therapy for PTSD to traditional healthcare systems: Tending to set and setting. *Frontiers in Psychiatry*, *16*. https://doi.org/10.3389/fpsyt.2025.1433999

Poyatos, L., Pérez-Mañá, C., Hladun, O., Núñez-Montero, M., de la Rosa, G., Martín, S., Barriocanal, A. M., Carabias, L., Kelmendi, B., Taoussi, O., Busardò, F. P., Fonseca, F., Torrens, M., Pichini, S., Farré, M., & Papaseit, E. (2023). Pharmacological effects of methylone and MDMA in humans [clinical trial]. *Frontiers in Pharmacology*, *14*. https://doi.org/10.3389/fphar.2023.1122861

Reiff, C. M., Richman, E. E., Nemeroff, C. B., Carpenter, L. L., Widge, A. S., Rodriguez, C. I., Kalin, N. H., & McDonald, W. M. (2020). Psychedelics and psychedelic-assisted psychotherapy. *American Journal of Psychiatry*, *177*(5), 391–410. https://doi.org/10.1176/appi.ajp.2019.19010035

Ricaurte, G. A., Yuan, J., & McCann, U. D. (2000). (+/–)3, 4-methylenedioxymethamphetamine ("ecstasy")-induced serotonin neurotoxicity: Studies in animals. *Neuropsychobiology*, *42*(1), 5–10. https://doi.org/10.1159/000026664

Richardson, A., Gurung, G., Samaranayaka, A., Gardner, D., DeGraaf, B., Wyeth, E. H., Derrett, S., Shepherd, D., & McBride, D. (2020). Risk and protective factors for post-traumatic stress among New Zealand military personnel: A cross sectional study. *PLOS ONE*, *15*(4), e0231460. https://doi.org/10.1371/journal.pone.0231460

Rigg, K. K. & Sharp, A. (2018). Deaths related to MDMA (ecstasy/molly): Prevalence, root causes, and harm reduction interventions. *Journal of Substance Use*, *23*(4), 345–352. https://doi.org/10.1080/14659891.2018.1436607

Ritter, A. & Cameron, J. (2006). A review of the efficacy and effectiveness of harm reduction strategies for alcohol, tobacco and illicit drugs. *Drug and Alcohol Review*, *25*(6), 611–624. https://doi.org/10.1080/09595230600944529

Rothman, R. B., Baumann, M. H., Dersch, C. M., Romero, D. V., Rice, K. C., Carroll, F. I., & Partilla, J. S. (2001). Amphetamine-type central nervous system stimulants release

norepinephrine more potently than they release dopamine and serotonin. *Synapse*, *39*(1), 32–41. https://doi.org/10.1002/1098-2396(20010101)39:1<32:AID-SYN5>3.0.CO;2-3

Sessa, B. (2017). MDMA and PTSD treatment. *Neuroscience Letters*, *649*, 176–180. https://doi.org/10.1016/j.neulet.2016.07.004

Sessa, B., Higbed, L., O'Brien, S., Durant, C., Sakal, C., Titheradge, D., Williams, T. M., Rose-Morris, A., Brew-Girard, E., Burrows, S., Wiseman, C., Wilson, S., Rickard, J., & Nutt, D. J. (2021). First study of safety and tolerability of 3, 4-methylenedioxymethamphetamine-assisted psychotherapy in patients with alcohol use disorder. *Journal of Psychopharmacology*, *35*(4), 375–383. https://doi.org/10.1177/0269881121991792

Sessa, B. & Nutt, D. (2015). Making a medicine out of MDMA. *British Journal of Psychiatry*, *206*(1), 4–6. https://doi.org/10.1192/bjp.bp.114.152751

Shuler, M. K. & Keller-Dupree, E. A. (2025). Human service professionals', educators', and students' attitudes toward psychedelics and psychedelic therapy. *Journal of Human Services*, *44*(1). https://doi.org/10.52678/001c.132043

Simmler, L., Buser, T., Donzelli, M., Schramm, Y., Dieu, L. H., Huwyler, J., Chaboz, S., Hoener, M., & Liechti, M. (2013). Pharmacological characterization of designer cathinones*in vitro*. *British Journal of Pharmacology*, *168*(2), 458–470. https://doi.org/10.1111/j.1476-5381.2012.02145.x

Smith, K. W., Sicignano, D. J., Hernandez, A. V., & White, C. M. (2022). MDMA-assisted psychotherapy for treatment of posttraumatic stress disorder: A systematic review with meta-analysis. *Journal of Clinical Pharmacology*, *62*(4), 463–471. https://doi.org/10.1002/jcph.1995

Sottile, R. J. & Vida, T. (2022). A proposed mechanism for the MDMA-mediated extinction of traumatic memories in PTSD patients treated with MDMA-assisted therapy. *Frontiers in Psychiatry*, *13*, 13. https://doi.org/10.3389/fpsyt.2022.991753

Stanicic, F., Zah, V., Grbic, D., & De Angelo, D. (2024). Cost-effectiveness of midomafetamine-assisted therapy (MDMA-AT) in chronic and treatment-resistant post-traumatic stress disorder of moderate or higher severity: A health-economic model. *PLOS ONE*, *19*(11), e0313569. https://doi.org/10.1371/journal.pone.0313569

Statistics New Zealand. (2022). *Experimental administrative population census: Data sources, methods, and quality (second iteration)*. https://www.stats.govt.nz/information-releases/wellbeing-statistics-2023

Statistics New Zealand. (2024). *Wellbeing statistics: 2023 (Updated)*. https://www.stats.govt.nz/information-releases/wellbeing-statistics-2023/

Tedesco, S., Gajaram, G., Chida, S., Ahmad, A., Pentak, M., Kelada, M., Lewis, L., Krishnan, D., Tran, C., Soetan, O. T., Mukona, L. T., & Jolayemi, A. (2021). The efficacy of MDMA (3, 4-methylenedioxymethamphetamine) for post-traumatic stress disorder in humans: A systematic review and meta-analysis. *Cureus*, *13*(5), e15070. https://doi.org/10.7759/cureus.15070

Thurgur, H., Sessa, B., Higbed, L., O'Brien, S., Durant, C., Wilson, S., Szigeti, B., Morgan, C. J. A., & Nutt, D. J. (2025). MDMA-assisted psychotherapy for AUD: Bayesian analysis of WHO drinking risk level and exploratory analysis of drinking behavior and psychosocial functioning at 3 months follow-up. *Alcohol & Alcoholism*, *60*(4), agaf031. https://doi.org/10.1093/alcalc/agaf031

Van Der Kolk, B. A., Wang, J. B., Yehuda, R., Bedrosian, L., Cooker, A., Harrison, C., Mithoefer, M., Yazar-Klosinki, B., Emerson, A., & Doblin, R. (2023). *Self-experience in MDMA assisted therapy of PTSD*. Cold Spring Harbor Laboratory. https://doi.org/10.1101/2023.01.03.23284143

Villiger, D. (2024). Personal psychedelic experience of psychedelic therapists during training: Should it be required, optional, or prohibited? *International Review of Psychiatry*, *36*(8), 869–878. https://doi.org/10.1080/09540261.2024.2357669

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

Vizeli, P., Straumann, I., Duthaler, U., Varghese, N., Eckert, A., Paulus, M. P., Risbrough, V., & Liechti, M. E. (2022). Effects of 3, 4-methylenedioxymethamphetamine on conditioned fear extinction and retention in a crossover study in healthy subjects. *Frontiers in Pharmacology*, *13*, 906639. https://doi.org/10.3389/fphar.2022.906639

Vollenweider, F. X., Gamma, A., Liechti, M., & Huber, T. (1998). Psychological and cardiovascular effects and short-term sequelae of MDMA ("ecstasy") in MDMA-Naïve healthy volunteers. *Neuropsychopharmacology*, *19*(4), 241–251. https://doi.org/10.1038/sj.npp.1395197; https://www.sciencedirect.com/science/article/pii/S0893133X9800013X

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

Wang, E., Mathai, D. S., Gukasyan, N., Nayak, S., & Garcia-Romeu, A. (2024). Knowledge, attitudes, and concerns about psilocybin and MDMA as novel therapies among U.S. healthcare professionals. *Scientific Reports*, *14*(1). https://doi.org/10.1038/s41598-024-78736-1

Wells, A., Fernandes, M., & Reynolds, L. (2024). Perceptions and attitudes towards psychedelic-assisted psychotherapy among health professionals, patients, and the public: A systematic review. *Journal of Psychedelic Studies*, *8*(1), 43–62. https://doi.org/10.1556/2054.2023.00294

Whelan, J., Noller, G., & Ward, R. D. (2024a). 3, 4-methylenedioxymethamphetamine (MDMA) consumption in Aotearoa New Zealand: A quantitative survey exploration. *Drug Science, Policy and Law*, *10*, 20503245241274170. https://doi.org/10.1177/20503245241274170

Whelan, J., Noller, G., & Ward, R. D. (2024b). Harm reduction behaviours and harm experiences of people who use 3, 4-methylenedioxymethamphetamine (MDMA) in Aotearoa New Zealand. *Harm Reduction Journal*, *21*(1), 67. https://doi.org/10.1186/s12954-024-00979-y

Wolfgang, A. S., Fonzo, G. A., Gray, J. C., Krystal, J. H., Grzenda, A., Widge, A. S., Kraguljac, N. V., McDonald, W. M., Rodriguez, C. I., & Nemeroff, C. B. (2025). MDMA and MDMA-assisted therapy. *American Journal of Psychiatry*, *182*(1), 79–103. https://doi.org/10.1176/appi.ajp.20230681

Wolfson, P. E., Andries, J., Feduccia, A. A., Jerome, L., Wang, J. B., Williams, E., Carlin, S. C., Sola, E., Hamilton, S., & Klosinski, B. (2020). MDMA-assisted psychotherapy for treatment of anxiety and other psychological distress related to life-threatening illnesses: A randomized pilot study. *Scientific Reports*, *10*(1), 1–15. https://doi.org/10.1038/s41598-020-75706-1

World Health Organization. (2022). *World mental health report: Transforming mental health for all*. https://www.who.int/publications/i/item/9789240049338

Yang, J., Wang, N., Luo, W., & Gao, J. (2024). The efficacy and safety of MDMA-assisted psychotherapy for treatment of posttraumatic stress disorder: A systematic review and meta-analysis from randomized controlled trials. *Psychiatry Research*, *339*, 116043. https://doi.org/10.1016/j.psychres.2024.116043

Young, M. B., Norrholm, S. D., Khoury, L. M., Jovanovic, T., Rauch, S. A. M., Reiff, C. M., Dunlop, B. W., Rothbaum, B. O., & Howell, L. L. (2017). Inhibition of serotonin transporters disrupts the enhancement of fear memory extinction by 3, 4-methylenedioxymethamphetamine (MDMA). *Psychopharmacology*, *234*(19), 2883–2895. https://doi.org/10.1007/s00213-017-4684-8

Žuljević, M. F., Hren, D., Storman, D., Kaliterna, M., & Duplančić, D. (2024). Attitudes of European psychiatrists on psychedelics: A cross-sectional survey study. *Scientific Reports*, *14*(1). https://doi.org/10.1038/s41598-024-69688-7