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THE BENEFITS AND HARM OF PSYCHEDELICS IN THE TREATMENT OF PATIENTS WITH MENTAL HEALTH AND SUBSTANCE ABUSE DISORDERS: AN INTEGRATIVE LITERATURE REVIEW

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Abstract. The purpose of the study was to describe the benefits and harm of using psychedelics in the treatment of patients with mental health and substance abuse disorders. The study focused on classic psychedelics, specifically psilocybin and LSD. The study was carried out as an integrative literature review and the data was sought using Medic, Cinahl, PubMed MEDLINE and PsycINFO databases. A total of 12 scientific studies were selected for the literature review, and the data was analyzed using an inductive content analysis method. The results of the study indicated that psychedelics can be used to treat patients with mental health and substance abuse disorders very effectively. Key mental health disorders that can be treated include treatment-resistant depression, self-harm, anxiety disorder, and the depressive phase of bipolar disorder. LSD and psilocybin helped effectively and quickly. Psychedelics increase plasticity and cognitive flexibility in the brain. However, it should be remembered that there is also some harm with the use of psychedelics. The harm occurs specifically outside the clinical research environment, where the use of psychedelics is linked to crime, spontaneous recreational use, and the simultaneous use of other intoxicants together with psychedelics. Preliminary research results indicate that psychedelics help effectively, quickly and provide long-term treatment responses in patients with mental health and substance abuse disorders. Additional clinical trials will be needed. The selection of different patient groups and the size of treatment doses should also be tested. Regulatory barriers should be lifted to allow clinical testing of psychedelic-assisted therapies. From the perspective of the global economy, it would be important to treat mental health and substance abuse disorders effectively and with permanent treatment results.
Keywords: psychedelics, substance abuse disorder, mental disorder, patient care

Introduction

Mental health and substance abuse disorders cost the Finnish government approximately EUR 11 billion annually. The share of disability pensions granted for mental disorders is more than half, and compared to the other 38 OECD member states, the suicide rate in Finland is higher than average. The OECD is an international organization for economic co-operation and development that, among other things, aims to increase social well-being. For the Finnish Government, addressing mental health problems is topical and important from the perspective of the country's economy and the well-being of its citizens. Despite numerous treatments, mental health and substance abuse disorders are becoming increasingly common worldwide. Therefore, psychedelics could play a key role in the development of new and effective therapies. (OECD 2023, Suomen Mielenterveys ry 2023.)

The study answered the research questions: What are the benefits of using psychedelics for treating patients with mental health and substance abuse disorders? What harm occurs by using psychedelics when treating patients with mental health and substance abuse disorders? The aim of the study was to provide current and new knowledge on the treatment of mental health and substance abuse disorders and for educational use. The study was carried out as an integrative literature review and the data consisted of 12 scientific studies conducted between 2019 and 2024. An inductive content analysis was used as a data analysis method.

Psychedelics are currently being studied around the world, as they have the potential to treat mental health and substance abuse disorders. For example, anxiety disorders, various addictions, depression, PTSD (post-traumatic stress disorder) and eating disorders can be effectively treated with psychedelic-assisted treatment. Psychedelics are a group of substances that affect the central nervous system and affect the experience of consciousness, thinking and normal perceptions, emotions, and embodiment. Among other things, psychedelics have been found to increase brain plasticity, i.e. the ability to form new connections and structures. (Nichols 2004; Tupper et al. 2015.) The research is globally significant because new forms of treatment for mental health and substance abuse disorders can lead to well-being of people and families on an individual level, and financially great savings and efficiency at work can be made both from the perspective of people, states, and society as a whole. (Nichols 2004; Tupper et al 2015.)

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Research methods

The data for this study consisted of articles retrieved from a number of databases. The inclusion criteria for the study were that the publications were published in Finnish and English between 2019 and 2024, were peer-reviewed scientific articles and dissertations that were available free of charge, and for which both a summary and a full text were available. The studies had to be related to the utilization, benefits, or harm of psychedelics and patients with mental health or substance abuse disorders (Table 1). The Medic, Cinahl, PubMed MEDLINE and PsycINFO databases were searched for the data. The time of the information retrieval was 18.1.–18.2.2024.

Table 1. Admission criteria and exclusion criteria

Admission criteria	**Exclusion criteria**
Publications between 2019 and 2024	Publication before 2019
Scientific articles and dissertations	Master's Theses, other journals, literature reviews
Peer reviewed	Not peer reviewed
Finnish or English	Not in Finnish or English
Abstract and full text available	No abstract or full text available
Free publication	Paid publication
Studies related to the utilization, benefits or harms of psychedelics	Not studies related to the utilization, benefits or harms of psychedelics
Studies related to patients with mental health or substance abuse disorders	No studies related to patients with mental health or substance abuse disorders

The keywords and phrases used when conducting the searches were psychedelics or LSD or DMT or mescaline or psilocybin and depression or "psychiatric illness" or "mental illness" or "mental disorder" or "mental health" or "substance use" or "substance abuse" and treatment or therapy and benefits or positive effects or disadvantages. After a critical evaluation, the material consisted of 12 research articles.

Critical evaluation of the data

The original studies found in the information retrieval had to be evaluated to be accepted into the dataset. This was an assessment of the quality of the research data, the aim of which was to reduce the number of studies and reviews not included in the data, i.e., to reduce the risk of bias. The critical evaluation of the data utilized the evaluation criteria of the Joanna Briggs Institute (JBI) for different studies (Table 2).

Table 2. Data quality assessment table

Evaluation criteria		1	2	3	4	5	6	7	8	9	10	11	12	13	Overall evaluation
no.	**Research**														
1.	Aaronson et al. 2023. Quasi-experimental study	y	y	y	y	y	y	y	y	y					Admitted
2.	Al-Naggar et al. 2021 *Qualitative research*	y	y	y	y	y	no	no	y	y	y				Admitted
3.	Carhart-Harris et al. 2019. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted
4.	DellaCrosse et al. 2022. *Qualitative research*	y	y	y	y	y	no	no	y	y	y				Admitted
5.	Doss et al. 2021. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted
6.	Fauvel et al 2021. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted
7.	Holze et al. 2023. *Randomized controlled trial (rct)*	y	y	y	y	y	y	y	y	y	y	y	y	no	Admitted
8.	Holze et al. 2022. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted
9.	Lea et al. 2020. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted
10.	Raison et al. 2022. *Cross-sectional study*	y	y	y	y	no	no	y	y						Admitted
11.	St. Arnaud & Sharpe 2022. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted
12.	Zeifman et al 2023. *Quasi-experimental study*	y	y	y	y	y	y	y	y	y					Admitted

Description of the material

Three quantitative studies were selected for the dataset, in which the data was collected using Internet-based questionnaires (Fauvel et al. 2021; Lea et al. 2020; St. Arnaud & Sharpe 2022). One of them was aimed at adults aged 18 years and over (n=164). The purpose of the study was to evaluate the hypothesis that post-psychedelic changes in self-blame decreased, and self-compassion increased (Fauvel et al. 2021). The second quantitative study was conducted during 2018 and the participants (n=525) were at least 16 years old. The participants had used psychedelics (Lea et al. 2020). The third quantitative study was targeted at psychedelic drug users (n=511). The purpose of the study was to determine how the use of psychedelics affected mental health (St. Arnaud & Sharpe 2022).

There were two qualitative studies (Al-Naggar et al. 2021; DellaCrosse et al. 2022). Al-Naggar et al. (2021) collected data from ten individuals recruited through social media who had used psilocybin for anxiety and/or depression. DellaCrosse et al. (2022) had interviewed 15 people with bipolar disorders who had consumed psilocybin-containing mushrooms. The purpose was to understand and deepen knowledge about their experiences with the effects of the fungi.

There were three randomized, double-blind, placebo-controlled crossover trials (Holze et al. 2023; Holze et al. 2022; Zeifman et al. 2023). Holze et al. (2023) aimed to identify alternative anxiety treatments based on the results of a placebo-controlled pilot study that had shown that two high doses of LSD reduced anxiety by law for up to two months. The study included adults aged 25 years and older (n=42) with an anxiety disorder or anxiety related to a life-threatening illness. (Holze et al. 2023.) The purpose of the second study conducted by Holze et al. (2022) was to determine how safe LSD was for depression, anxiety, and cluster headaches among healthy participants (n=83) (Holze et al. 2022). The third study was conducted on subjects (n=59) who had been diagnosed with major depression (Zeifman et al. 2023).

There were three clinical experimental non-randomized trials (Carhart-Harris et al. 2019; Doss et al. 2021; Aaronson et al. 2023). Carhart-Harris et al. et al. (2019) described the safety and efficacy of psilocybin for six months in the treatment of treatment-resistant depression (n=20) (Carhart-Harris et al. 2019). Doss et al. (2021) described the mechanisms underlying the persistent therapeutic effects of psilocybin and the effectiveness of psilocybin therapy in patients with major depression. The study included patients (n=24) with major depression (Doss et al. 2021). Aaronson et al. (2023) investigated the safety and efficacy of psilocybin during depressive episodes in people with bipolar disorder (BDII). The participants (n=19) were aged 18 to 65 years with bipolar disorder (BDII) and a current depressive episode lasting more than three months. The participants had not benefited from at least two pharmacological treatments during the current depressive episode (Aaronson et al. 2023).

There was one cross-sectional study. The purpose of the study was to confirm the frequency of mental health benefits and harm caused by psychedelic use in adults who used psychedelics independently (n=2510) (Raison et al. 2022). To sum up the data, except for one study, the study participants and data providers were 18 years old. The number of participants varied widely. The largest sample was that of Raison et al. (n=2510) (Raison et al. 2022). The quantitative surveys clearly had the largest sample volumes. The smallest sample was that of Al-Naggar et al. (n=10) (Al-Naggar et al. 2021). All the studies were used as the data in this study answered the research questions of the research. The material consisted of 12 scientific studies, which were accepted using the inclusion and exclusion criteria (Table 1) and the quality assessment of the material (Table 2). Of the studies, there were eight quasi-experimental studies, two qualitative studies, one cross-sectional study and one randomized controlled study.

The data consisted of studies in which volunteers used classic psychedelics independently as self-medication or were administered and closely monitored in a clinical research setting. Volunteers who participated in the studies suffered from depression, dipolar disorders, or anxiety disorders. The studies tested hypotheses on the effects of psychedelics and mental health. The purpose of the research was, among other things, to gain more information about the treatment potential, effectiveness, safety, and the right target groups for psychedelics.

The data meaning results of the 12 original studies were analyzed using an inductive content analysis. The analysis began with the principal researcher reading the data several times to obtain an overview of benefits and harm. All the statements were first marked and then grouped into categories and name by their similarities and differences. In addition, they were named according to their content.

Research results and discussion

Psychedelics have been found to have several benefits in the form of positive sensations and experiences (Figure 1). In previous studies, the use of psychedelics has been found to cause sensitized sensory sensations, pleasant perceptual distortions and changes in body experience, changes in self-experience, blurring boundaries between the self and the environment, experiences and insights of deep meaningfulness, and deeper understanding of oneself and the world around one (Nichols 2016; Griffiths et al. 2006). In this study, the results included similar positive feelings and experiences, but also some completely new results. Psychedelics were found to have effective protection against depression recurrence and a depression-curing effect. Especially in the treatment of treatment-resistant depression, where the depression has been treated with all existing therapies, the response to treatment with psychedelics was found be particularly good. Psychedelics were also found to be effective in reducing anxiety (Fauvel et al. 2021; Holze et al. 2023; Doss et al. 2021).

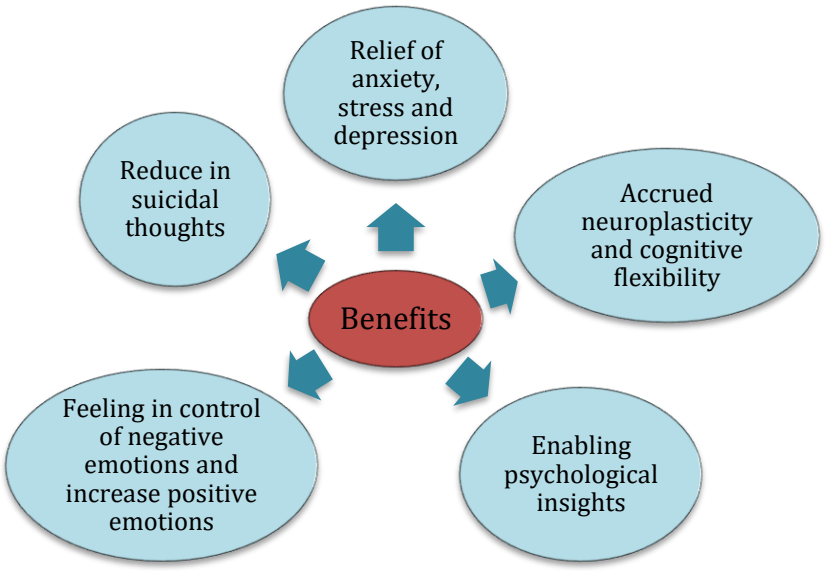

Fig. 1. The benefits of psychedelics use

Intravenous LSD and psilocybin therapy have been shown to cause changes in the brain in the sleep network area in previous studies. This has meant an increase in cognitive flexibility in the brain (Nichols 2016; Pollan 2021). Comparable results were also found in the results of this study, such as increased cognitive flexibility and neuroplasticity (Doss et al. 2021). Increased cognitive flexibility and neuroplasticity help especially in the treatment of anxiety disorders and depression, as they bring more new insights by unlocking blocked thoughts. Changes in positive mood and behavior, as well as increased self-efficacy, are associated with the effectiveness of treatment. New research findings on LSD-assisted therapy revealed an increase in psychological insights, mystical experiences and the dismantling of old negative ways of thinking, as well as the development of new perspectives (Holze et al. 2023).

There were no treatment-related adverse events with psilocybin in a previous study (Bongenschutz et al. 2015). Comparable results were also evident in this work. Psychedelic treatment was well tolerated and there were no serious adverse reactions (Carhart-Harris et al. 2019). Previous research has highlighted psilocybin's effect on reducing addiction and improving the quality of life (Bongenschutz et al. 2015). These research results are also supported by the results of this study, according to which psychedelics were perceived to have an effect on improving one’s own mental health. The latest information includes a reduction in suicidal thoughts and stress, an increase in emotional control, stabilization of mood, a reduction in self-blame, feelings of comfort, peace and serenity, and improved cognitive performance (Carhart-Harris et al. 2019; Lea et al. 2020; Al-Naggar et al. 2021).

Previous research has highlighted factors relevant to psilocybin response, including personality, state of mind at the time of use, psychopathology, experience of drug use, and the socioeconomic context of use (Studerus et al. 2012). The result of this study supports the previous results, as psychedelics were found to have a motivating effect on introspection in addition to the above-mentioned research results. Another new finding was the increase in psychological insights, which has led to the dismantling of previous negative ways of thinking and the development of new perspectives (Carhart-Harris et al. 2019).

Previous research results did not reveal the benefits of psychedelics, especially in the treatment of bipolar disorder. New findings of this study included a reduction in depression, a more open exploration of emotions and memories, an increased ability to process emotions, a more positive experience of oneself, the development and relaxation of new perspectives, and an improvement in sleep quality (DellaCrosse et al. 2022; Aaronson et al. 2023).

There were no previous research results on the harm of psychedelics in the treatment of patients with bipolar disorder. New adverse drug findings included mania and worsening mania, insomnia and impaired sleep quality, agitation, anxiety, distressing sensory experiences and psychotic symptoms, and difficulty in decision-making (Figure 2). Psychiatric hospitalization was due to a manic phase that broke out during or after the administration of psychedelics (DellaCrosse et al. 2022; Aaronson et al. 2023).

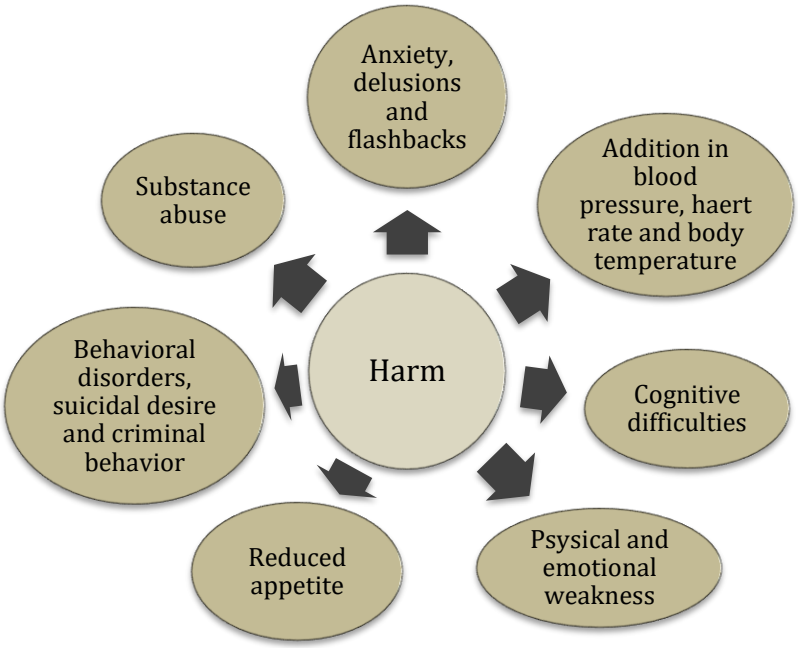

Fig. 2. The harm of psychedelics use

Previous research findings on psychedelic-induced harm in the form of various unpleasant sensations and experiences have included feelings of loss of control, dissociative symptoms, panic, paranodins, anxiety, hallucinations, and various states of fear (Nichols 2016; Griffths et al. 2006). These findings are also supported by the results of this study, according to which LSD use in particular had increased anxiety and delusions. The latest information also includes loss of appetite and various changes in the circulatory system caused by LSD, such as increased blood pressure, increased heart rate and body temperature, as well as cognitive difficulties such as lack of concentration and forgetfulness. Added information on acute adverse effects of LSD included physical and emotional weakness, restlessness, impaired balance, headache, dizziness, sweating and olfactory hypersensitivity. Transient flashbacks were also a disadvantage for seven percent of LSD users. However, no long-term side effects were mentioned (Holze et al. 2023; Holze et al. 2022).

No previous information was found on the risks associated with the use of psychedelics and predictors of abuse. Only anxiety was highlighted in previous research results related to the use of psychedelics. New findings included various behavioral disorders, an overstimulated state, unpleasant physical sensations, lack of concentration, willingness to commit suicide and to engage in criminal behavior. New research results on the harm of psychedelics also revealed substance abuse and overly frequent use of psychedelics. A new finding was that the simultaneous use of other drugs or drugs in combination with psychedelics was strongly linked to adverse reactions (Raison et al. 2022; Lea et al. 2020; Arnaud & Sharpe 2022).

According to the results of this study, psychedelics have therapeutic potential and benefits especially in the treatment of treatment-resistant depression, anxiety disorders and the depressive phase of bipolar disorder. In the treatment of bipolar disorder, it is important to consider the possibility of a manic phase, the onset of mania with or after the administration of psychedelics. The onset of mania is a serious nuisance that can lead to psychiatric hospitalization, for example (Fauvel et al. 2021; Holze et al. 2023; DellaCrosse et al. 2022; Aaronson et al. 2023).

The harm caused by psychedelics was particularly related to their spontaneous use, where other drugs, or alcohol were used with psychedelics. With self-use, the operating environment, the number of psychedelic doses, overly frequent use, one's own state of mind at the time of use, and medical history also had a strong influence on the development of adverse effects. Trials conducted in clinical settings at low doses under controlled conditions did not reveal adverse events. From this, it can be said that psychedelics are safe and very useful in the treatment of various patients with mental and substance abuse disorders when properly dosed and supervised by experts for the right target group.

As a limitation of this study, it has to be pointed that only peer-reviewed literature was searched, and some results may have been missed due to the exclusion of gray literature. In addition, this integrative review only included English-language and freely available studies. As this is a global issue, important information may have been missed.

Conclusions

The study of psychedelics is currently topical and essential around the world. Currently, legislative obstacles in Finland, for example, prevent effective research into psychedelics in clinical settings in healthy volunteers suffering from various diseases. Psychedelics are still marked by criminalization, and many people use psychedelics for intoxicating purposes, but also as a self-care and for recreational use. The independent use of psychedelics outside clinical settings has benefits and drawbacks for mental health or substance abuse problems.

Psychedelic-assisted therapies require more randomized controlled trials, complemented by various research methods and social science research (Lea et al. 2020). LSD-assisted therapy suggests long-term benefits in treating anxiety, but larger studies should be conducted in addition to these research findings (Holze et al. 2023). Psychedelics have very convincing and good treatment results, but there are also a number of side effects. Some of the survey results are based on responses to online questionnaires, so the accuracy of the results can be partially doubted (Fauvel et al. 2021; Lea et al. 2020; St. Arnaud & Sharpe 2022).

A six-month clinical trial, experimental, non-randomized study yielded significant treatment outcomes for treatment-resistant depression after just two psilocybin sessions. Psilocybin-assisted therapy requires further studies in double-blind, randomized control trials (Carhart-Harris et al. 2019).

Research findings suggest that different use parameters should be considered when assessing the association between an individual's psychedelic use and mental health and well-being (St. Arnaud & Sharpe, 2022). Psilocybin has promisingly positive therapeutic effects in patients with depression and anxiety, even after just one dose. However, patients should be guided by a knowledgeable healthcare professional on the safe use and correct dosing of psilocybin for positive treatment outcomes (Al-Naggar et al. 2021).

Research results show that psilocybin use yields both benefits and harm for people with bipolar disorder. Carefully planned clinical trials with a focus on patient safety and treatment effectiveness are needed (DellaCrosse et al. 2022). Psilocybin is effective and safe during the treatment for the depressive phase in bipolar disorder, but this study also demonstrated the need for further studies (Aaronson et al. 2023). Self-help use of psychedelics may provide mental health benefits for some people, but also disadvantages for others (Raison et al. 2022).

A reduced role of experiential avoidance during psilocybin therapy helps to understand and optimize psilocybin-assisted therapy (Zeifman et al. 2023). Changes in cognitive flexibility and neuroplasticity enable increased positive changes and new learning. However, continued increases in neuroplasticity may not be beneficial for psilocybin-assisted therapy (Doss et al. 2021). It is hoped that the research results will help in the development of psychedelic-assisted therapy and the maximum use of psychedelics in cognitive behavioral therapies (Fauvel et al. 2023).

The use of psychedelics outside the clinical and controlled environment spontaneously and in potentially excessive doses, combined with other substances or intoxicants classified as narcotics, predicts significantly greater adverse effects than scientific experiments conducted in clinical settings. Significant factors in the use of psychedelics include the environment in which the psychedelic substance is used, the user's illnesses and state of mind at the time of use, the amount of the psychedelic dose, the frequency of use and the simultaneous use of other intoxicants.

Implemented in clinically controlled conditions at the right doses for a carefully selected group, psychedelics have significant potential in the treatment of patients with mental health and substance abuse disorders. Especially people with depression and anxiety disorders can be effectively treated with psychedelics. As a treatment for bipolar disorder, psychedelics still need further research, as the onset or worsening of mania can lead to the need for psychiatric hospitalization. Increased cognitive flexibility and neuroplasticity can play a key role in the treatment of mental health and substance abuse disorders and many other conditions. However, in some psychiatric illnesses, increased cognitive flexibility and neuroplasticity can cause further harm. Such mental disorders include, for example, schizophrenia and the manic phase of bipolar disorder.

Looking ahead, it would be essential to amend the legislation in a way that would allow clinical trials of psychedelic-assisted therapies in healthy volunteers with various diseases. If sufficiently comprehensive research results are confirmed, psychedelic-assisted therapies should be an alternative to treating patients with mental health and substance abuse disorders.

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