

Citizen scientists show placebo effect may explain benefits of microdosing

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Taking small, regular doses of psychedelics has been attributed to a range of psychological benefits but the support is largely drawn from anecdotal reports and observational studies. Credit: Shutterstock

The psychological benefits linked with taking regular, small doses of psychedelic drugs are likely the result of users' expectations, a study suggests

The findings come from the largest placebo-controlled trial on psychedelics to date in which more than 190 members of the public, who were already microdosing with LSD, implemented their own placebo-control measures at home following online instructions from the study team.

Researchers observed that for those who microdosed for several weeks, a number of psychological parameters improved. However, those taking placebos saw similar improvements, with no significant difference between the microdose and placebo groups.

According to the researchers, their findings highlight that users' expectations play a strong role. They add that their innovative 'self-blinding citizen science' approach could help to inform

future studies on microdosing and psychedelics, and even potentially improve the design of clinical trials.

Balázs Szigeti, lead author and a research associate within the Centre for Psychedelic Research at Imperial College London, said: "Anecdotal reports about the benefits of microdosing are almost certainly biased by the placebo effect.

"Our findings confirmed some of the beneficial psychological effects of microdosing from anecdotal reports and observational studies, such as improved sense of wellbeing and life satisfaction.

"But we see the same improvements among participants taking placebos. This suggests that the improvements may not be due to the pharmacological action of the drug but can instead be explained by the placebo effect."

The team's findings are published today in the journal *eLife*.

Citizen science and psychedelics

Microdosing has been attributed to a range of [psychological benefits](#) including improvements in wellbeing, creativity and overall cognitive performance. However, the support is largely drawn from anecdotal reports and [observational studies](#) and there remains a paucity of evidence to back the claims.

In the latest study, researchers designed a citizen science study where individuals who were already microdosing could participate online.

A total of 191 participants followed a procedure to prepare gel capsules containing either a low dose of LSD (estimated at 13 micrograms) or a placebo. As part of the process, they followed instructions to mix their capsules so they ended up with a set

containing either placebo or microdose—but without Psychiatry at Imperial knowing what their capsules contained.

The setup included barcodes which, when scanned, linked to the study's IT infrastructure, and enabled the researchers to track who had taken microdoses or placebos.

Over a four-week period, participants took two pills over during each week—scanning the barcode. They also filled out surveys about their experiences and completed online cognitive tests.

The researchers also found that within a few hours after taking a microdose, on average participants reported improvements across a range of psychological measures, including mood, creativity and anxiety.

However, participants who thought they were taking a microdose, but in reality took a placebo, reported similar psychological benefits—this means that the expectation of taking a microdose was as good as actually taking a microdose, showing a strong placebo effect.

The authors caution the study has a number of limitations and that the results are not as reliable as those of a traditional placebo-controlled clinical study. Among these are that the potency of drugs would likely have varied, as participants sourced their own drugs.

In addition, they explain the participants would likely have been experienced enough with psychedelics to correctly guess whether they took a 'real' microdose or a placebo.

However, they say their citizen science approach may more accurately reflect 'real-life microdosing,' compared to a clinical trial. Additionally, the study cost a fraction of what a traditional clinical study would cost, which may make it a useful first step in assessing whether other popular phenomena can be explained by the placebo effect.

"The successful execution of this study could inspire similar studies in a broad range of scientific or medical contexts," explained David Erritzoe, senior author and a Clinical Senior Lecturer in

"Accounting for the placebo effect is important when assessing trends such as the use of cannabidiol oils, fad diets or supplements where social pressure or users' expectations can lead to a strong [placebo](#) response. Self-blinding citizen science initiatives could be used as an inexpensive, initial screening tool before launching expensive clinical studies."

Szigeti added: "We hope this self-blinding methodology will be used in other areas as well. We certainly plan to use it in further studies both about psychedelics and other psychoactive substances as well."

This article is based on materials from *eLife*.

More information: Balázs Szigeti et al. Self-blinding citizen science to explore psychedelic microdosing, *eLife* (2021). [DOI: 10.7554/eLife.62878](https://doi.org/10.7554/eLife.62878)

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