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'Magic Mushroom' Drug Study Probes Science, Spirituality

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TUESDAY, July 11 (HealthDay News) -- Volunteers who tried the hallucinogenic ingredient in psychedelic mushrooms during a controlled study funded by the U.S. government had "mystical" experiences, and many of them still felt unusually happy months later.

The aims of the Johns Hopkins researchers were simple: to explore the neurological mechanisms and effects of the compound, as well as its potential as a therapeutic agent.

Although psilocybin -- the hallucinogenic agent in the *Psilocybe* family of mushrooms -- first gained notoriety more than 40 years ago, it has rarely been studied because of the controversy surrounding its use.

This latest finding, which sprang from a rigorously designed trial, moves the hallucinogen's effect closer to the hazy border separating hard science and religious mysticism.

"More than 60 percent of the volunteers reported effects of their psilocybin session that met the criteria for a 'full mystical experience' as measured by well-established psychological scales," said lead researcher Roland Griffiths, a professor in the departments of neuroscience, psychiatry and behavioral biology at Johns Hopkins University in Baltimore.

What's more, most of the 36 adult participants -- none of whom had taken psilocybin before -- counted their experience while under the influence of the drug as "among the most meaningful and spiritually significant experiences of their lives," Griffiths said. Most said they became better, kinder, happier people in the weeks after the psilocybin session -- a fact corroborated by family and friends.

The researchers also noted no permanent brain damage or negative long-term effects stemming from use of psilocybin.

But the study, published in the July 11 online edition of *Psychopharmacology*, did not neglect the hallucinogen's "dark side."

Even though the candidates for the landmark study were carefully screened to reduce their vulnerability and closely monitored during the trial, "We still had 30 percent of them reporting periods of very significant fear or anxiety which could easily escalate into panic and

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dangerous behavior if this were given in any other kind of circumstances," Griffiths said.

"We simply don't know what causes a 'bad trip,' " he added, "and we can't forecast who'll have a difficult time and who won't."

Still, many experts hailed the research, which was funded by the U.S. National Institute of Drug Abuse and the Council on Spiritual Practices, as long overdue.

No less than Dr. Herbert Kleber -- former deputy director of the White House's Office of National Drug Control Policy under former President George H.W. Bush -- said these types of studies "could shed light on various kinds of brain activity and lead to therapeutic uses for these categories of drugs." He authored a commentary on the Hopkins study.

"Over time, with appropriate research, maybe we can figure out ways to decrease [illicit drugs] bad effects," while retaining those effects beneficial to medical science, Kleber said.

Scientific research into the effects of illegal, Schedule 1 drugs such as psilocybin are allowed by federal law. But the stigma surrounding their use has kept this type of research to a minimum. The taboo surrounding drugs such as psilocybin "has some wisdom to it," Griffiths said, but "it's unfortunate that as a culture we so demonized these drugs that we stopped doing research on them."

Psilocybin appears to work primarily on the brain's serotonin receptors to alter states of consciousness. In their study, the Baltimore team sought to determine the exact nature of psilocybin's effects on humans, under strictly controlled conditions.

To do so, they sought volunteers with no prior history of drug abuse or mental illness who also had a strong interest in spirituality, since the drug was reputed to trigger mystical states.

The study included 36 college-educated participants averaging 46 years of age. It was also randomized and double-blinded, meaning that half of the participants received psilocybin, while the other half received a non-hallucinogenic stimulant, methylphenidate (Ritalin), but neither researchers nor the participants knew who got which drug in any given session. Each volunteer was brought in for two or three sessions in a "crossover" design that guaranteed that each participant used psilocybin at least once.

During each eight-hour encounter, participants were carefully watched over in the lab by two trained monitors. The volunteers were instructed by the researchers to "close their eyes and direct their attention inward."

According to the Baltimore team, nearly two-thirds of the volunteers said they achieved a "mystical experience" with "substantial personal meaning." One-third rated the psilocybin experience as "the single most spiritually significant experience of his or her life," and another 38 percent placed the experience among their "top five" most spiritually significant moments.

Most also said they became better, gentler people in the following two months. "We don't think that's delusional, because we also interviewed family members and friends by telephone, and they confirmed these kinds of claims," Griffiths said.

So, is this "God in a pill"? Griffiths said answering questions of religion or spirituality far exceeds the scope of studies like these.

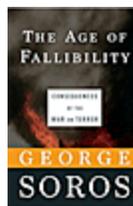
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primary mystical experience," he said. "But that finding -- as precise as it may get -- will in no way inform us about the metaphysical question of the existence of a higher power."

He likened scientific attempts to seek God in the human brain to experiments where scientists watch the neurological activity of people eating ice cream.

"You could define exactly what brain areas lit up and how they interplay, but that shouldn't be used as an argument that chocolate ice cream does or doesn't exist," Griffiths said.

Another expert said the study should give insights into human consciousness.

"We may gain a better understanding of how we biologically react to a spiritual state," said Dr. John Halpern, associate director for substance abuse research at McLean Hospital, Harvard Medical School.

Halpern, who's conducted his own research on the sacramental use of the hallucinogenic drug peyote by Native Americans, said he's encouraged that the Hopkins trial was organized in the first place. "This study, by some of the top-tier people in the country, shows that it's possible for us to re-look at these substances and evaluate them safely in a research setting," he said.

For his part, former deputy drug czar Kleber stressed that agents such as psilocybin "carry a high likelihood of misuse as well as good use."

Griffiths agreed the study should not be seen as encouragement for casual experimentation.

"I think it would be awful if this research prompted people to use the drug under recreational conditions," he said, "because we really don't know that there aren't personality types or conditions under which you could take things like that and develop persisting harm."

More information

There's more on hallucinogens and their dangers at the [U.S. National Institute on Drug Abuse](#).

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