Study contests use of smoked cannabis in treatment of cocaine addiction

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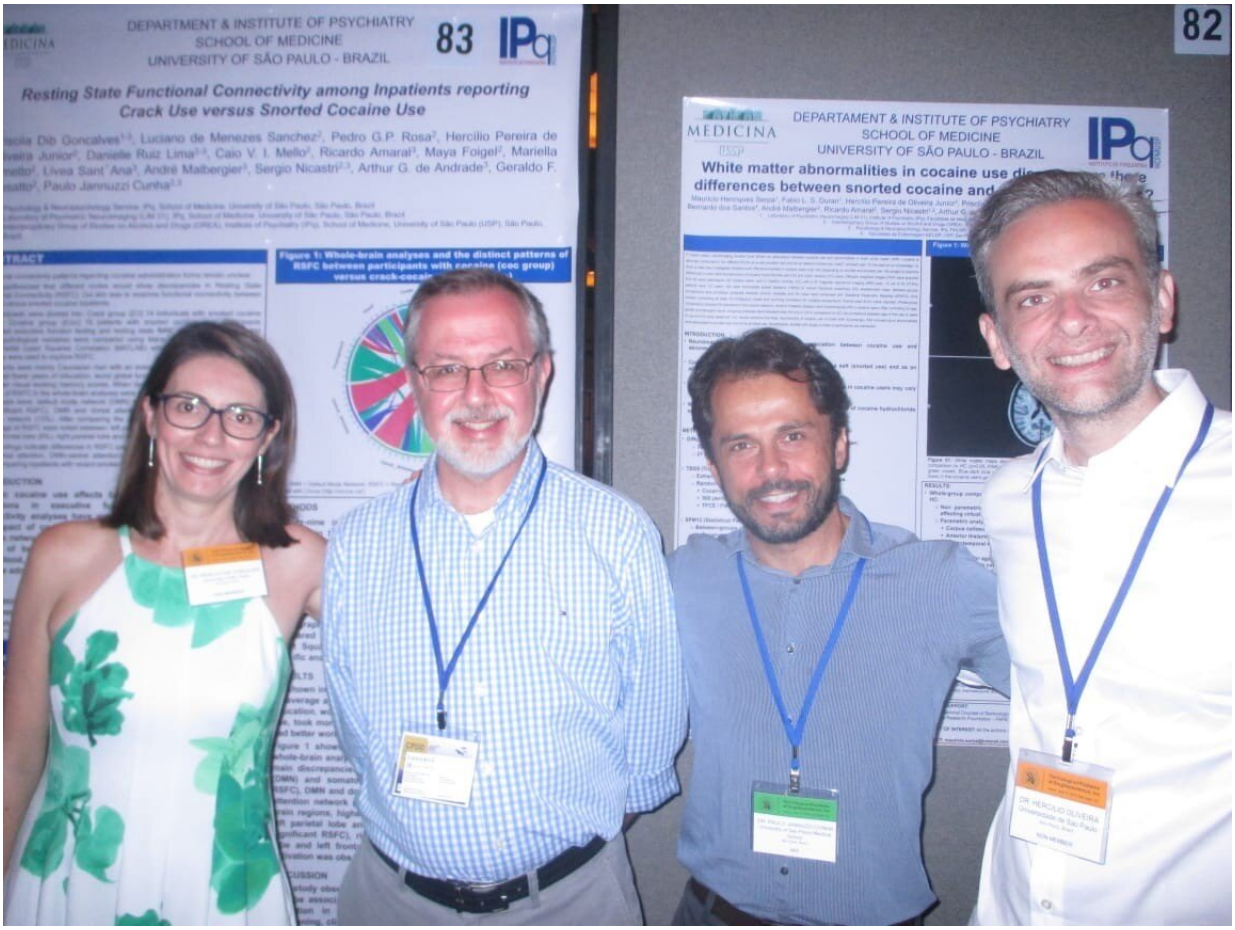

Researchers in Brazil evaluated cocaine and crack addicts undergoing rehabilitation for six months and observed a higher relapse rate and worse cognitive impairment among patients who smoked cannabis to try to mitigate their craving for cocaine. Credit: USP

A Brazilian study published in the journal *Drug and Alcohol Dependence* shows that cannabis smoked recreationally does not work as a harm reduction strategy for crack and cocaine addicts undergoing rehabilitation. Instead of reducing their craving for cocaine, whether nasally insufflated in powder form or smoked in the form of crack crystals, cannabis use made the patients' clinical condition worse.

The patients were evaluated for six months after discharge from a voluntary inpatient treatment program at the Psychiatry Institute of Hospital das Clínicas (HC), the general hospital run by the University of São Paulo Medical School (FMUSP). Researchers in FMUSP's Interdisciplinary Group for the Study of Alcohol & Drugs (GREA) and Psychiatric Neuroimaging Laboratory (LIM-21) found that cannabis use impaired central nervous system executive functions relating to impulse control, among others.

"The aim of the study was to ensure that public policy for drug users is based on scientific evidence. When damage limitation was introduced as a policy in Brazil for cocaine and crack users, there was no proof that it would be beneficial. Our study completely rules out this strategy for cocaine addicts," said Paulo Jannuzzi Cunha, a coauthor of the article. Cunha teaches graduate students in psychiatry at FMUSP and is a researcher affiliated with LIM-21. Previously, he was awarded a postdoctoral scholarship by São Paulo Research Foundation—FAPESP.

According to Cunha, the LIM-21 research group advocates a short period of hospitalization while chemically dependent patients are undergoing detoxification. He stressed that rehabilitation should be voluntary and should not entail isolating patients from society since they are prone to relapses.

"We aim to help them build up the strength to face their real problems in the context of their day-to-day domestic lives. They learn strategies for

ridding themselves of the temptation to use the drug again. Long periods of inpatient treatment are expensive and remove the patient from reality. There's no guarantee they won't relapse after leaving seclusion," he said.

Currently, there are no approved pharmacological treatments for cocaine dependence. The researchers recommend cognitive behavioral therapy (CBT), contingency management, and psychiatric medical treatment of comorbidities such as depression, anxiety disorders and attention deficit hyperactivity disorder (ADHD).

In many cases, these mental disorders occur in parallel with chemical dependence and jeopardize adherence to treatment, preventing the patient's recovery. "Integrated evidence-based treatment tends to be effective in the medium to long run," Cunha said. "In addition to providing multidisciplinary care, we advise addicts to participate in support groups made up of former users."

Months of follow up

In the study, 123 volunteers were divided into three groups: 63 cocaine addicts who smoked cannabis recreationally, 24 cocaine addicts who did not use cannabis frequently, and a control group consisting of 36 healthy individuals without a history of drug use.

The groups were followed for six months after the end of the inpatient treatment. One month after discharge, 77 percent of the cocaine addicts who smoked cannabis had maintained abstinence without relapses, compared with 70 percent of those who did not use cannabis.

Three months after discharge, however, cannabis use as a harm reduction strategy was no longer working well. Fewer than half of the subjects who didn't smoked cannabis (44 percent) and only 35 percent of those who did had not relapsed into cocaine use; the proportions were 24

percent and 19 percent, respectively, after six months. The researchers concluded that the addicts who used cannabis eventually resumed cocaine use in the long run.

"The results refuted the hypothesis that recreational cannabis could prevent relapse and help cocaine addicts achieve abstinence. A quarter of the noncannabis smokers were able to control the impulse to use cocaine, and only a fifth of those who expected to benefit from the harm reduction strategy had no relapses. Prior cannabis use doesn't improve the long-term prognosis. In fact, the study suggests the opposite," said psychiatrist Hercílio Pereira de Oliveira Júnior, the first author of the article.

Executive functions impaired

According to the findings of the study, both groups of cocaine addicts undergoing rehabilitation displayed significant neurocognitive impairments compared with the control group in tasks that involved working memory, speed processing, inhibitory control, mental flexibility and decision making.

However, the group that smoked cannabis performed even worse in tests of executive functions associated with attention span in specific contexts, the ability to memorize, the planning of complex behavior, mental processing speed, and impulse control.

Cognitive tests and neuroimaging scans were performed throughout the study. Urine samples were analyzed to detect drug use.

"One of the limitations of our study was the impossibility of analyzing the type of cannabis used by the volunteers. It was the drug they used at home or in some other personal context," Cunha said.

Cannabis preparations can contain at least 80 different cannabinoids, two of which are particularly relevant: THC, which is associated with relaxation, dependency and neurological damage, and cannabidiol (CBD), which can modulate the effects of THC. "Our study didn't include a specific assessment of the possible effects of CBD, which may have therapeutic potential but accounts for a very small proportion of smoked cannabis and is much harder to extract in pure form from the cannabis plant," Cunha said.

Impact of early use on rehabilitation

Another result of the study was the finding that the earlier the onset of cannabis and cocaine use in the lives of addicts, the greater the likelihood of relapse during cocaine rehabilitation.

"Previous research showed that early onset of substance abuse impairs neurodevelopment and hinders the organization of important neural networks in the brain. Early exposure to cannabis therefore entails a worse prognosis with regard to not only cannabis but also other substances," Oliveira Júnior said.

"This variable is predictive and points to the negative impact of cannabis and cocaine on brain maturation, characterizing a worse prognosis for the addiction."

Damage limitation for heroin addicts

The use of substances such as methadone, an opioid, has been considered an effective harm reduction strategy as part of rehabilitation treatment for people addicted to heroin and other injectable drugs, achieving a measure of success in various countries since the 1990s.

Based on the results with heroin addicts, previous uncontrolled studies suggested that recreational use of cannabis could be an effective strategy to reduce the craving for cocaine and crack. "This even resulted in harm reduction organizations and public policies advocating the use of smoked cannabis as a strategy to reduce anxiety and the craving for cocaine. Our study contradicts the view that this type of strategy is effective," Oliveira Júnior said.

Cunha explained that the different outcomes of harm reduction for users of cocaine, crack and heroin are due to the differences between the drugs. "Heroin abstinence very quickly produces physiological and biological withdrawal symptoms," he said. "Without the help of an opioid, an abstinent addict soon begins to sweat profusely and feel nauseous. The symptoms may also include seizures and other serious physical problems."

A pharmacological harm reduction strategy that mitigates withdrawal symptoms and gives the patient a bridge to long-term abstinence is fully appropriate, he added.

"In contrast, cocaine withdrawal symptoms relate more to mood. Typically, they include irritability and depression," he said. "The physical effects observed in users of injectable drugs aren't at all typical of cocaine withdrawal. Hence the importance of behavioral strategies that help patients deal better with their emotions and remain abstinent. This is more effective in the long run."

More information: Hercílio Pereira de Oliveira et al, Distinct effects of cocaine and cocaine + cannabis on neurocognitive functioning and abstinence: A six-month follow-up study, *Drug and Alcohol Dependence* (2019). DOI: 10.1016/j.drugalcdep.2019.107642

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