

The impact on young adults' mental health of fentanyl and cocaine addiction

El impacto de la adicción al fentanilo y la cocaína en la salud mental de los adultos jóvenes

O impacto na saúde mental dos jovens adultos na dependência de fentanila e cocaína

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Introduction: Cocaine, benzoylmethylecgonine or benzoic acid ester, also known as coca, is an alkaloid, stimulant, with anesthetic effects, used mainly as a recreational drug. Cocaine is one of the most widely used psychoactive drugs worldwide and is extracted from the leaves of the *Erythroxylum coca* plant. Abusive use of cocaine can trigger several consequences for the human body, including the oral cavity¹. Fentanyl is used as a fast-acting, highly potent analgesic drug. It is administered before the infusion of the sedative and muscle relaxant and in smaller doses than in general anesthesia, which aims to minimize the exaggerated cardiovascular response (more significant in adults) and the increase in intracranial pressure (it should not be administered intravenously, as a bolus, in patients with intracerebral impairment). If fentanyl is mixed with other synthetic drugs, the anesthetic tends to be fifty times more addictive than heroin and one hundred times stronger than morphine. The primary line of investigation indicates that this substance would be used to be combined with other drugs, such as cocaine and, probably, in synthetic drugs, such as LSD and ecstasy^{1,2}.

Objective: Reflect on the impact on the mental health of young adults with fentanyl and cocaine dependence, highlighting the consequences for the body and the implications for clinical management.

Methodology: This reflective, descriptive and critical study was carried out according to a bibliographic review based on books and scientific articles. Data collection was carried out in indexed databases, such as SciELO and Google Scholar, covering the period from 2018 to 2023. The research used the descriptors: "Mental Health", "Patient Care Team", "Fentanyl" and "Drugs of Misuse" to identify relevant studies. The search and selection of studies, as well as the writing of the study, took place in the months of March and April 2023. Studies that discuss the impact of fentanyl and cocaine use on mental health, with a focus on neurological, cardiovascular and psychiatric dysfunctions, were included in the review. Articles that did not directly address mental health or that focused on substances other than fentanyl and cocaine were excluded. Data analysis was conducted qualitatively, with a descriptive and critical approach.

Results and Discussion: Cocaine is a benzoylmethylecgonine, ecgonine is derived from tropine, an element like atropine, and scopolamine. It is the only naturally occurring local anesthetic. After intravenous administration, its plasma half-life ranges from 60 to 90 minutes, but may be longer after nasal or oral administration. When inhaled, it reaches the brain circulation in 6 to 8 seconds, and intravenously, in 12 to 16 seconds. Nasal administration can cause intense vasoconstriction, which limits absorption. Peak plasma concentrations are obtained in 60 minutes and are maintained for up to 6 hours^{3,4}. Cocaine is metabolized approximately 80 to 90%. Metabolism occurs primarily in the plasma by hydrolysis of the ester radical; the first metabolite is ecgonine methyl ester, which undergoes degradation to benzoylecgonine, the main urinary metabolite. Norcaide, another metabolite, is generated by demethylation in the liver through the cytochrome P450 system; 1 to 5% of the substance remains unchanged, and the metabolites are excreted in the urine 6 to 14 hours after administration. Tests to analyze cocaine use can be performed by analyzing blood, urine, and hair. The urinary toxicology test is the reference test, it identifies metabolite



benzoylecgonine that can be detected 4 to 48 hours after exposure to the drug. It is emphasized that the use of this drug by the pregnant woman produces irreversible effects on the fetus^{4,5}. Fentanyl is a synthetic opioid related to phenylpiperidines. It was developed for pharmaceutical use in 1960 by Paul Janssen (1926–2003), one of the greatest contemporary scientists and the most productive medicinal chemist in the world, who created approximately 80 medicines. Fentanyl's analgesic potency is 50–100 times greater than that of morphine, in addition to having a shorter onset of action and being absorbed more quickly by the body. It is a relevant substance in anesthetic practice, being used for the treatment of severe chronic pain and

postoperative pain, as well as in general and regional anesthesia⁶.

Conclusion: Understanding and recognizing complications related to cocaine use are essential for the proper management of patients who use this substance. If a rigorous methodology is used, prevention projects can be supported at all levels, contributing data and clarifying several issues, since the personal and social cost of addiction in developed countries has been much higher than the cost of prevention. In Brazil, even without practices or habits related to this issue, it is necessary to prioritize preventive policies.

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