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RESEARCH ARTICLE (ORIGINAL)

Undergraduate Health Students' Knowledge of Psychoactive Substances: A Qualitative Study

Conhecimento de Estudantes do Ensino Superior da Área da Saúde Sobre Drogas Psicoativas: Um Estudo Qualitativo

Conocimiento de los Estudiantes Universitarios del Área de la Salud Sobre las Drogas Psicoactivas: Un Estudio Cualitativo

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Abstract
Background: Knowledge of psychoactive substances is essential for health professional training and affects care quality.
Objective: To identify and analyze undergraduate health students' knowledge of psychoactive substances.
Methodology: A descriptive qualitative study was conducted with 31 Nursing, Physical therapy, and Dentistry students recruited in classrooms between February and April 2023. Face-to-face semi-structured interviews were carried out. Data were analyzed using thematic content analysis, as well as similarity and co-occurrence analysis. Dual coding, researcher triangulation, and an audit trail were used to enhance credibility.
Results: The sample was predominantly female (*n* = 27; 87.1%), aged 18 to 49 years. Participants mentioned a total of 83 drug references, with marijuana, cocaine, crack, and ecstasy being the most frequently cited. Two main themes emerged: (1) Effects on the central nervous system; (2) Psychological effects and therapeutic use. Some participants identified psychoactive drugs as medications.
Conclusion: Students demonstrated heterogeneous knowledge with gaps, suggesting the need to integrate content related to psychoactive drugs into curricula and implement active teaching strategies to improve clinical practice.

Keywords: students, health occupations; psychoactive substances; qualitative research

Resumo
Enquadramento: O conhecimento sobre psicofármacos é essencial para a formação em saúde e impacta a qualidade do cuidado.
Objetivo: Identificar e analisar o conhecimento de estudantes de graduação da área da saúde sobre psicofármacos.
Metodologia: Estudo qualitativo descritivo com 31 estudantes de Enfermagem, Fisioterapia e Odontologia, recrutados por divulgação em sala de aula entre fev–abr/2023. Foram realizadas entrevistas semiestruturadas presenciais. Os dados foram submetidos à análise de conteúdo temática e à análise de similitude por coocorrência. Adotou-se dupla codificação, triangulação entre investigadores e registo de auditoria para garantir credibilidade.
Resultados: Predomínio feminino (*n* = 27; 87,1%); idades 18–49 anos. Foram registadas 83 drogas mencionadas; as mais citadas foram maconha, cocaína, crack e ecstasy. Emergiram duas representações centrais: (1) atuação no sistema nervoso central; (2) efeitos psicológicos e uso terapêutico. Alguns participantes reconheceram psicofármacos como medicamentos.
Conclusão: Observou-se conhecimento heterogéneo e lacunas que indicam a necessidade de integrar conteúdos sobre psicofármacos nos currículos e de estratégias pedagógicas ativas para qualificar a atuação clínica.

Palavras-chave: estudantes de ciências da saúde; substâncias psicoativas; pesquisa qualitativa

Resumen
Marco contextual: El conocimiento sobre los psicofármacos es esencial para la formación en salud e influye en la calidad del cuidado.
Objetivo: Identificar y analizar los conocimientos de los estudiantes universitarios del área de la salud sobre los psicofármacos.
Metodología: Estudio cualitativo descriptivo con 31 estudiantes de Enfermería, Fisioterapia y Odontología, captados mediante difusión en el aula entre febrero y abril de 2023. Se realizaron entrevistas semiestructuradas presenciales. Los datos se sometieron a un análisis de contenido temático y a un análisis de similitud por coocurrencia. Se adoptó una doble codificación, triangulación entre investigadores y registro de auditoría para garantizar la credibilidad.
Resultados: Predominio femenino (*n* = 27; 87,1 %); edades 18–49 años. Se registraron 83 drogas mencionadas; las más citadas fueron la marihuana, la cocaína, el crack y el éxtasis. Surgieron dos representaciones centrales: (1) acción en el sistema nervioso central; (2) efectos psicológicos y uso terapéutico. Algunos participantes reconocieron los psicofármacos como medicamentos.
Conclusión: Se observó un conocimiento heterogéneo y lagunas que indican la necesidad de integrar contenidos sobre psicofármacos en los planes de estudio y estrategias pedagógicas activas para cualificar la actuación clínica.

Palabras clave: estudiantes de ciencias de la salud; sustancias psicoactivas; investigación cualitativa

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Introduction

The use of psychoactive drugs poses a major public health challenge. According to the World Drug Report 2023 (United Nations Office on Drugs and Crime [UNODC], 2023), more than 296 million people worldwide used psychoactive substances in 2021, corresponding to 5.8% of the global population aged 15 to 64. In Brazil, the II National Survey on Alcohol and Other Drug Use (Fundação Oswaldo Cruz, 2021) reports a high prevalence among young people, including university students, particularly related to alcohol, marijuana, and cocaine. In the United States, approximately 43% of university students reported cannabis use in 2020 (National Institute on Drug Abuse [NIDA], 2020). In Europe, data from the European Union Drugs Agency and the European Monitoring Centre for Drugs and Drug Addiction (2023) indicate an increase in the use of synthetic drugs among young people.

Future health professionals must therefore be technically, scientifically, and clinically prepared to work with psychoactive drug users across various levels of care within the Unified Health System (*Sistema Único de Saúde*, SUS). However, studies such as Sousa et al. (2023) indicate persistent knowledge gaps in this area in both academic and clinical settings. The literature indicates that the study population (university students) may exhibit risk behaviors associated with psychoactive substance use (Cruz et al., 2024). Insufficient professional preparation and personal vulnerability are two factors commonly observed among this group. An important scientific gap remains, justifying the need for research aimed at understanding how students construct meaning regarding psychoactive drugs.

The Theory of Social Representations (TSR), developed by Serge Moscovici (Shimizu et al., 2025), was chosen to support the analysis of this study because it helps explain how social groups construct shared meanings about complex objects, such as psychoactive drugs, which in turn influence beliefs, attitudes, and practices. Understanding the knowledge held by health students about psychoactive substances is therefore essential for guiding future educational strategies and public policies, as well as contributing to professional training and to health promotion and prevention efforts. Based on these premises, the following research question arises: What do undergraduate health students know about psychoactive drugs? To answer this research question, the study pursued two objectives: (1) To identify and analyze undergraduate health students' knowledge of psychoactive drugs; and (2) To discuss how this knowledge can impact health care.

Background

Psychoactive drugs are defined as substances capable of altering behavior, mood, and cognition (Almeida, 2022). They can be used for both therapeutic and recreational purposes, with potential risks.

From a theoretical perspective, the TRS provides a useful lens for understanding how social groups develop and share meanings associated with complex objects, such as psychoactive drugs. This theory offers insights not only into technical and scientific aspects but also into sociocultural issues and beliefs, and it helps explain how these perceptions influence the daily practices of these users (Shimizu et al., 2025).

Although these substances have therapeutic uses when prescribed in clinical settings, they can also be consumed recreationally, which carries potential risks of addiction and social harm (NIDA, 2020). Beyond the conceptual basis, it is important to consider regulatory and public policy frameworks. International organizations such as the UNODC (2021, 2023) and the WHO (2022) reinforce the need for integrated strategies for prevention, harm reduction, and mental health care. In Brazil, the psychiatric reform redirected mental health care to primary care services and general hospitals, which increased the need to prepare health professionals both technically and theoretically to work with psychoactive drug users. Therefore, training higher education students in health fields is strategic, as these future professionals will be at the forefront of caring for people with drug use disorders and associated mental health conditions. Given the large number of undergraduate students in health-related programs, assessing their knowledge is essential for developing more effective educational and care strategies.

Research question

What is the level of knowledge of psychoactive drugs among undergraduate health students, and how can this knowledge affect health care?

Methodology

This descriptive qualitative study included 31 students enrolled in undergraduate health programs (Nursing, Physical therapy, and Dentistry) at a private university center in Rio de Janeiro. The research team consisted of three researchers with experience in mental health and qualitative methods. Two researchers conducted data collection, description, and analysis, while the third contributed to the discussion of the results. The researchers' prior experience with studies on health education and psychoactive drugs may represent a potential source of bias. To minimize this risk, triangulation and consensus strategies were applied.

Undergraduate students aged 18 or older and enrolled in the second semester onward were eligible. Participants were recruited through convenience sampling in the classrooms. Those who expressed interest signed an informed consent form and participated in an interview. The interviews were recorded and transcribed in full. A textual corpus was created and subjected to content analysis based on Bardin's methodology, complemented by similarity and co-occurrence analysis using the

IRAMUTEQ software (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*). Simple descriptive statistics were used for sociodemographic data. To ensure methodological rigor, the following strategies were used: theoretical saturation (stopping data collection when content became repetitive and no new elements emerged); researcher triangulation (independent analyses conducted by researchers and discussed in groups); auditability (maintaining detailed records of the analytical processes); and literature-based discussion (external validation of the findings in light of previous studies).

The study complied with the ethical guidelines of National Health Council Resolutions 466/2012 and 510/2016 and was approved by the Research Ethics Committee (CAAE 79486824.0.0000.5284).

Results

The final sample included 31 students from Nursing, Physical therapy, and Dentistry programs. There was a predominance of female participants (*n* = 27; 87.1%), along with three male participants (9.7%), and one participant who chose not to answer (3.2%). Ages ranged from 18 to 49 years, with a mean of 34.3 years and a median of 37 years (Table 1).

Table 1

Sociodemographic characterization of participants

Variable	Category	*n* (%)
Gender	Female	27 (87.1%)
	Male	3 (9.7%)
	No answer	1 (3.2%)
Age	18–49 years	Mean: 34.3 Median: 37
Program	Nursing	18 (58.06%)
	Physical therapy	6 (19.36%)
	Dentistry	7 (22.58%)

Note. n = Absolute frequency*; %* = Relative frequency.

When asked to name drugs they knew or had heard of, participants generated 83 mentions, 30 of which referred to unique substances and 53 to repeated ones. These mentions were quantified by frequency and presented in a table to facilitate visualization and interpretation of the results. Table 2 shows the substances cited and their respective frequencies.

Table 2

Distribution of the drugs mentioned by participants

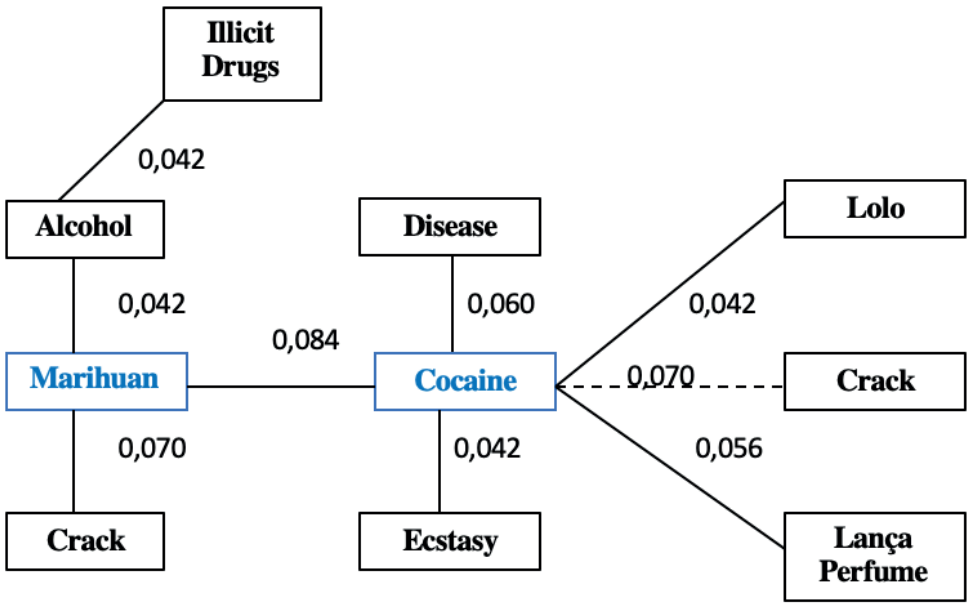
Drug	***n***	**%**
Maconha (Marijuana/cannabis)	12	14.4
Cocaína (Cocaine)	11	13.2
Crack (Crack cocaine)	9	10.8
Ecstasy (Ecstasy)	8	9.6
Álcool (Alcohol)	5	6.0
Lança-perfume (Ether-based inhalant)	4	4.8
Heroína (Heroin)	3	3.6
Lolo (Chloroform-ether mix)	3	3.6
Balinha (Ecstasy pill)	2	2.4
Cigarro (Cigarette)	2	2.4
Drogas sintéticas (Synthetic drugs)	2	2.4
Drogas ilícitas (Illicit drugs)	2	2.4
LSD (LSD)	2	2.4
MD (MDMA/molly)	2	2.4
Morfina (Morphine)	1	1.2
Anfetaminas (Amphetamines)	1	1.2
Anti-depressivos (Antidepressants)	1	1.2
Boa-noite Cinderela (Date-rape drug)	1	1.2
Cetamina (Ketamine)	1	1.2
Clonazepam (Clonazepam)	1	1.2
Cogumelos (Magic mushrooms)	1	1.2
Midazolam (Midazolam)	1	1.2
Fentanil (Fentanyl)	1	1.2
Inalantes (Inhalants)	1	1.2
Latuda (lurasidone)	1	1.2
Nicotina (Nicotine)	1	1.2
Pó (Powder-usually cocaine)	1	1.2
Precedex (Precedex-dexmedetomidine)	1	1.2
Propofol (Propofol)	1	1.2
Tarja-preta (Controlled medications)	1	1.2
Total	83	100

Note. n = Absolute frequency; *%* = Relative frequency.

The similarity analysis was conducted using the IRaMuTeQ software to identify connections between the most frequently cited words. This type of analysis, rooted in social psychology and the TSR, makes it possible to detect relationships between the terms mentioned by the participants, providing tools to better understand the context of their responses. Figure 2 shows a strong association between *marijuana* and *cocaine* (index 0.084), as well as proximity between *cocaine* and *crack*.

Figure 2

Maximum similarity tree of undergraduate health students' knowledge of psychoactive drugs



When asked about the meaning of "psychoactive drugs", two categories emerged: Action on the central nervous system and psychological effects and therapeutic use.

Discussion

This study revealed that undergraduate health students possess heterogeneous knowledge about psychoactive drugs. Their social representations are organized around two categories emerged: Action on the central nervous system and psychological effects and therapeutic use. These findings are consistent with national and international research reporting significant knowledge gaps among university health students regarding psychoactive substances, including both pharmacological aspects and social implications of use (Siebra et al., 2021; Pires et al., 2020). This scenario reinforces the need to incorporate a more comprehensive approach to this topic into the curricula of undergraduate health programs.

The frequent mention of *marijuana*, *cocaine*, *crack*, and *ecstasy* reflects their increased visibility in social and media contexts, as well as their epidemiological prevalence among adolescents and young adults (UNODC, 2023; Fundação Oswaldo Cruz, 2021). Previous studies have shown that these drugs are among the most commonly used by Brazilian university students, being associated with both recreational use and contexts of social vulnerability (Sampaio et al., 2024; Sousa et al., 2023). Participants' emphasis on the most widespread illicit drugs suggests that their knowledge is strongly influenced by broader social discourses, which is consistent with the TSR (Shimizu, 2025).

A relevant finding is that some participants identified psychoactive drugs as medications, highlighting their therapeutic use. This perception reflects the influence of health education, which discusses psychoactive substances, such as antidepressants, anxiolytics, and antipsychotics, in a clinical and pharmacological context. According to the TSR, individuals construct meanings through the interaction between scientific knowledge and common-sense knowledge. Thus, the association of psychoactive drugs with the treatment of mental disorders demonstrates how students construct meanings that fluctuate between a biomedical perspective and the broader societal perception of drugs (Almeida, 2022).

These results have both practical and theoretical implications. From a practical point of view, they emphasize the need to integrate specific content on psychoactive drugs into undergraduate curricula in an interdisciplinary and cross-cutting manner. This integration should use active teaching methodologies that encourage critical thinking and the practical application of knowledge. From a theoretical point of view, this study contributes to a better understanding of health students' social representations, highlighting how the educational process influences the perceptions of drugs, which may influence clinical practice and the development of public health policies.

The similarity and co-occurrence analysis revealed a strong connection between *marijuana* and *cocaine*, indicating that most participants who mentioned marijuana as a psychoactive drug also mentioned cocaine. This finding is expected, given that both substances are widely used in today's society.

While marijuana is used for both recreational and medicinal purposes, cocaine is often associated with recreational use and is considered one of the most addictive and dangerous drugs (Batista, 2022).

Another factor that may explain the strong link between these two substances in this study is that health students

may have been influenced by their widespread use in society. Psychoactive drugs have been discussed across multiple sectors, including governments, religious communities, health organizations, and the media (Rios, 2024).

It is also important to note that these substances are often associated with health, public safety, and crime-related issues, which may have led health students to identify them as psychoactive drugs. In addition, marijuana and cocaine have been frequent subjects of biomedical research, which may have sparked students' interest in the topic (Batista, 2022).

Regarding the similarity analysis, a strong association, though somewhat weaker, was also found between cocaine and crack. These substances are closely related; cocaine is the pure form, whereas crack cocaine is an impure form of cocaine. Their similarity explains the strong association observed between them (UNODC, 2021).

This study revealed both physical and psychological associations with the term "psychoactive drugs." The responses highlight the relationship between drugs and mental health, emphasizing the effects of chemicals on the individual's central nervous system and perceptions (Bedendo, 2021), as shown in the following statements: "A substance that alters brain function and also changes perception and mood." (Participant 1); "It affects the brain and becomes an uncontrollable addiction." (Participant 3); and "These drugs act on the brain, altering sensations, emotional states, and level of consciousness." (Participant 18).

Participants recognized that drugs have a negative impact on both physical and psychological health. Chemical dependency can impair an individual's ability to cope with stressful situations, thereby affecting their quality of life and interpersonal relationships (Bedendo, 2021). Chemical dependency can also lead to financial and legal problems that further affect an individual's mental health. The following statements illustrate this point: "For me, drugs are bad for your health, and that's bad for your mental health." (Participant 12); "They are used to treat patients with emotional disorders, psychoses, schizophrenia" (Participant 27); and "Some drugs that mess with your mind." (Participant 30).

Two participants defined psychoactive drugs as medicines or medications: "They are the basis for controlled medicines." (Participant 24) and "They are medicinal drugs." (Participant 28).

Health students perceive psychoactive substances as medicines because their courses teach them about the therapeutic potential of these substances in the treatment of mental disorders. The use of psychoactive drugs to manage mental health conditions is common practice, as these substances are prescribed to relieve symptoms of anxiety, depression, bipolar disorder, and other conditions (Rios et al., 2024).

Despite the abundance of data obtained, some limitations should be acknowledged. First, the study may have been influenced by social desirability bias, as participants may have adjusted their responses according to socially accepted expectations on the topic. In addition, the interpretation of qualitative data involves the researchers' experiences and perspectives, which may have introduced interpretive bias. Although triangulation and auditability strategies were used, this possibility cannot be completely ruled out. The aim of qualitative research is not statistical generalization, but rather transferability. Transferability depends on the richness of the contextual description and the reader's ability to assess whether the findings are relevant in other settings. Thus, while transferability is limited, the results may inform health programs with similar characteristics and guide future multicenter studies. The limitations of the intentional sample, which was collected from a single higher education institution, are also acknowledged, restricting the generalizability of the findings. Nevertheless, the results offer relevant contributions. From an educational perspective, there is a need to strengthen teaching about psychoactive drugs in undergraduate health programs to train professionals who can better assist users of these substances in different contexts within the Brazilian Unified Health System. From a theoretical perspective, the role of social representations is highlighted as an analytical tool for understanding how students develop their perceptions of drugs at the intersection of scientific knowledge and social discourse.

Conclusion

This study revealed that undergraduate health students demonstrate heterogenous knowledge of psychoactive drugs, with their representations focusing on two main domains: Action on the central nervous system and psychological effects and therapeutic use. Significant conceptual gaps were identified, particularly regarding a broader understanding of psychoactive drug use and abuse, underscoring the need for further research and dissemination of this topic.

The high number of participants who mentioned marijuana, cocaine, crack, and ecstasy reflects both the epidemiological prevalence of these substances and their social visibility. The association of some drugs with medications demonstrates the influence of academic training on students' representations.

From a practical standpoint, the results reinforce the importance of integrating content on psychoactive drugs into the curricula of health programs, using active methodologies that promote critical thinking and the connection between theory, practice, and society. From a theoretical perspective, this study contributes to a better understanding of how health students' social representations of psychoactive drugs can inform future research, educational policies, curriculum reform, and the development of public policies.

The limitations identified are the small sample size consisting of three undergraduate health programs, the convenience-based recruitment method, and the difficulty of comparing the results with those of other national and international studies, all of which may limit the generalizability and transferability of the findings. Nevertheless, this study provides relevant insights for strengthening health education and suggests the need for multicenter

research to better understand the social representations of psychoactive drugs across different academic settings.

Author contributions

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