

Approach to Mental Disorders in Dental Education in a Brazilian State

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Abstract

Oral diseases present higher prevalence in people with mental disorders, which makes dental care a possible means for screening and referral to mental health specialized care. Because some dental conditions can be caused by or associated with mental disorders, dentists can identify patients' mental health care needs. However, they have shown low confidence and a lack of training in dealing with mental health patients, which may indicate a deficiency in the approach to mental disorders in dental education. This study aimed to verify whether undergraduate Dentistry courses in a Brazilian state introduce knowledge about adult mental disorders into their curriculum content. The courses operating in the state of Minas Gerais, Brazil, were assessed by information available at the e-MEC system, the official database of courses and Higher Education Institutions in Brazil, and at institutions' websites. Two researchers independently assessed pedagogical projects, curriculum matrices, syllabi, and teaching plans. Psychology disciplines Applied Psychology and Psychology-related were identified, and their syllabi and teaching plans were screened, searching for themes related to mental disorders and/or psychopathology. Of the 73 courses included, 34 were evaluated, and only five courses presented disciplines with some approach to mental disorders and/or psychopathology. The results showed that a large part of undergraduate Dentistry courses assessed do not address knowledge about adult mental disorders as part of dental education. Considering the impact of mental disorders on oral and systemic health, it is important to reflect on the role of dentists in mental health care and on the responsibility of Higher Education Institutions regarding the development of skills and competencies of these professionals. The results of this study draw attention to the need to address adult mental disorders in dental education, reinforcing mental health as an important aspect of patients' general health.

Keywords: mental health, oral health, dental education, interprofessional education, primary health care, diagnostic screening programs

1. Introduction

Despite the impact of mental disorders on oral health and the importance of dentists as part of a multidisciplinary work team of primary health care (PHC), they have little participation in the matrix-based model of Brazilian mental health policy. On the other hand, a significant proportion of mental health patients treated in specialized services do not have their needs identified by PHC (Dos Santos Treichel, Bakolis, & Onocko-Campos, 2021). Besides the low detection of mental disorders, diagnostic errors are frequent, as well as the inappropriate use of psychotropic drugs, such as benzodiazepines (Fagundes, Campos, & Fortes, 2021). In this context, dental care may represent an important opportunity to identify mental health needs and to refer patients to specialized care.

However, the lack of confidence, training, and practice experience has been observed by studies assessing dental team/dental students' perceptions, knowledge, attitudes, and practices toward patients with specific mental disorders (depression, anxiety, and eating disorders). These studies suggested that mental health and its relationship to oral and systemic health may be an appropriate addition to dental program curricula (Hill, Hainsworth, Burke, & Fairbrother, 2008; Frimenko, Murdoch-Kinch, & Inglehart, 2017; McCleary, Rainchuso, Vineyard, & Giblin-Scanlon, 2020).

A systematic review by Haggman-Henrikson et al. (2018) assessed published studies on the implementation of screening for psychological comorbidity in dental and dental hygiene education. They observed a paucity of publications in this field, although psychosocial assessment is part of the curricula in at least some dental schools (Haggman-Henrikson et al., 2018). Although some studies have assessed undergraduate dental students'

perceptions and knowledge about mental health issues, they have made it by surveys and qualitative methods or have been focused on students' mental health and well-being (Frimenko et al., 2017; Elliot, Sharma, Omar, & Hurst, 2020; Maragha, Donnelly, Schuetz, von Bergmann, & Brondani, 2021). The evaluation of dental program curricula and their content that addresses patients' mental health is scarce or non-existent.

This study aimed to verify whether undergraduate Dentistry courses in a Brazilian state introduce knowledge about adult mental disorders in their curricular content. The following research question was: "Do undergraduate Dentistry courses of Minas Gerais present disciplines that introduce knowledge about adult mental disorders?" We stated the hypothesis that dental education in Minas Gerais does not introduce knowledge about mental disorders in adults.

1.1 Mental Disorders and the Brazilian Mental Health Policy

Mental disorders are among the leading causes of burden globally, affecting 970.1 million people in 2019 worldwide, according to the Global Burden of Diseases, Injuries, and Risk Factors Study 2019 (GBD 2019). Among the disorders reported, anxiety and depressive disorders were the most prevalent (301.4 and 279.6 million, respectively), while schizophrenia and eating disorders were the least prevalent. Brazil is among the four countries with the highest burden rates of mental disorders (considering disability-adjusted life years), with 6.95 million cases of major depressive disorders and 17.32 million cases of anxiety disorders, according to the same report (GBD 2019 Mental Disorders Collaborators, 2022). Mental disorders are Brazil's third cause of disease burden, behind only cardiovascular diseases and cancers (Bonadiman, De Azeredo Passos, Mooney, Naghavi, & Melo, 2017; Marchionatti, Rocha, Becker, Gosmann, & Salum, 2023). Furthermore, the impact of the COVID-19 pandemic on the prevalence and burden of major depressive disorder and anxiety disorders were substantial, particularly among females and younger populations, increasing the risk of other diseases and suicide (COVID-19 Mental Disorders Collaborators, 2021).

Brazilian mental health policy is strongly associated with the strategy of substituting care in psychiatric hospitals for community social psychiatric centers (from Portuguese, Centro de Atenção PsicoSocial – CAPS), decentralizing psychiatric care, and developing a diverse network to provide access, efficacy, and efficiency for people with mental disorders (Brazil, 2004; Mateus et al., 2008). Its development was related to the creation of the Unified National Health System (from Portuguese, Sistema Único de Saúde – SUS), decentralization of healthcare administration in the country, mobilization of health professionals, and social and cultural changes, with participation by all sectors of society (Almeida, 2019).

The SUS expanded and articulated health care points for people with mental disorders by including the Psychosocial Care Network (from Portuguese, Rede de Atenção PsicoSocial – RAPS) (Brazil, 2017). Considering the multidimensionality of the mental health-illness process, the organizational arrangement of articulation between CAPS and Primary Health Care (PHC), hospital units, and urgency and emergency services was structured in a matrix-based support model (Brazil, 2017). Matrix-based support in RAPS corresponds to a proposal for integrated care and a model of pedagogical-therapeutic intervention (Dos Santos Treichel et al., 2021), which favors the realization of an expanded clinic with dialogical integration between different specialties, shifting the power of specialists and reinforcing the management power of the interdisciplinary team (Campos & Domitti, 2007).

In this context, groundwork is needed to ensure that case sharing between PHC and specialized services is effective (Dos Santos Treichel et al., 2021). Interaction between mental health teams working at the CAPS level and primary care health workers may facilitate referrals to specialized psychiatric treatments as part of a diagnostic screening program. Training professionals acting in primary care to identify and prevent mental health problems and provide comprehensive care beyond diagnosis and medication management could improve equity in the Brazilian health system (Mateus et al., 2008; Bonadiman et al., 2017).

1.2 Mental Health and Oral Health

Mental disorders can cause or worsen oral diseases due to risky oral health behaviors, lack of adequate access to dental care, as well as the iatrogenic effects of some psychotropic medications (Joury et al., 2023). Oral health-related problems range from discomfort and functional impairment to social isolation resulting from painful and unsightly teeth or ill-fitting dentures (Choi et al., 2021).

Severe mental illness, substance use, common mental disorders (depression and anxiety disorders), and eating disorders have been associated with caries, periodontal disease, edentulism, and dental erosion (Teoh, Moses, & McCullough, 2019; Choi et al., 2022). Depression and anxiety have been frequently associated with the prevalence of bruxism and temporomandibular disorders (Kinalski et al., 2019; Florjański & Orzeszek, 2021). Interaction

between mental disorders and oral diseases can occur through several bidirectional social, psychological, behavioral, and biological pathways (Joury et al., 2022; Skallevold, Rokaya, Wongsirichat, & Rokaya, 2023).

Considering the higher prevalence of oral diseases in people with mental disorders, dentists may be the first clinicians to suspect a psychiatric diagnosis (Choi et al., 2022; Skallevold et al., 2023).

1.3 Dental Education and Interprofessional Education

In Brazil, the National Curricular Guidelines for the Dentistry course encourage the training of a professional capable of understanding verbal and non-verbal communication, as well as working as a team in an interprofessional, inter/transdisciplinary way, with the dexterity of joint knowledge to solve health problems, considering the biological diversity and the relationship between oral health and the individual's systemic conditions (Brazil, 2021). However, Brazilian dentists have faced problems with certain regularity in clinical practice due to the lack of preparation to act on the mental health care needs of users, presenting difficulties in identifying psychological distress, resolving the demand encountered, and in the referrals to be made, which weakens the principle of comprehensiveness recommended by the SUS (Curado & Bastos, 2011).

General dentists demonstrated an awareness of the importance of performing patient-welcoming actions and that 'quality of care' is related to multiple factors but reported a lack of education in preparing professionals to address interpersonal and social issues (Mattos, Gllagner, Paiva, & Abreu, 2015).

Reality may be similar in other regional contexts. In the United Kingdom, Elliot et al. (2020) employed a mixed-methods approach of a scenario-based survey followed by focus groups with dental students. They observed low confidence across all scenarios proposed, but self-reported confidence was lowest with scenarios handling undiagnosed mental health conditions that could impact dental treatment. From their qualitative results, six themes emerged: prejudice, lack of education, avoidance, rejecting responsibility, insufficient patient care, and features of confidence. The authors suggested that the low students' confidence originates from a limited focus within the Dentistry curriculum.

In the United States of America, Berryhill et al. (2024) explored dentists, dental hygienists, dental assistants, and office staff's perspectives on implementing processes for adult patient mental health screening and referral to services into dental practices. Participants noted the importance of implementing systematic procedures for mental health screening and referral to services into dental practices. However, they reinforced the need for streamlined processes and high-quality training and resources. On the other hand, participants universally expressed enthusiasm for the topic and a desire to learn more about effective and efficient methods for addressing mental health concerns within their patient populations.

Indeed, Lloyd-Williams et al. (2001) observed that general dental practitioners consider having a role in identifying patients with possible mental health problems. This includes being able to identify people with undiagnosed mental health problems and being aware of dental conditions that may be caused by or associated with mental health problems. Mental disorders should be suspected at the dental office when atypical presentations of common oral or uncommon oral diseases are observed (Skallevold et al., 2023).

Although discussions about psychosocial assessment rarely occur in dental education environments, psychological screening can benefit patients with more personalized and satisfactory health care, higher adherence rates, and the probability of a better prognosis, as well as the professionals and students involved, by using better treatment strategies and by perceiving the patient and not just the disease (Haggman-Henrikson et al., 2018).

2. Method

This documentary analysis study used a non-probabilistic convenience sample of undergraduate Dentistry courses in Minas Gerais, Brazil. Brazil has 632 undergraduate Dentistry courses in activity (population of study), most in the Southeast region (37.02%). The two largest states in the region, São Paulo and Minas Gerais, hold most courses in the country. São Paulo has the most undergraduate Dentistry courses ($n = 103$). However, Minas Gerais was chosen for this study because it is the state with most courses in Federal Universities, which present a more consolidated partnership with the SUS ($n = 6$).

Information was obtained from the e-MEC system, the official database of courses and Higher Education Institutions (HEI) in Brazil, regardless of the Education System. The e-MEC Registration data must comply with the authorization acts of the courses and HEI, published by the Public Power or competent body of the institutions within the limits of exercising their autonomy. The regularity of courses and institutions depends on the validity of the respective authorization acts and the timeliness of the protocol of regulatory processes for maintaining authorization for the institution's operation and offering courses. The information entered by the HEI of the State Systems, regulated and supervised by the respective State Education Council, or by the HEI of the Federal System,

within the scope of university autonomy, is declaratory, and veracity is the responsibility of the respective institution, under the legislation.

Two researchers (P.J.T.A and D.R.D.) independently collected data about undergraduate Dentistry courses in the state of Minas Gerais in the e-MEC database in February 2024 from information available on institutions' websites. Courses from public and private institutions located in Minas Gerais, in operation in 2024, were included. Courses that had not been started were excluded.

From the list generated by e-MEC, researchers accessed the links available in the system of the institutions' websites, searching for pedagogical projects, curriculum matrices, syllabi, and teaching plans. Psychology disciplines, Applied Psychology and Psychology-related were identified, and their syllabi and teaching plans were screened, searching for themes related to mental disorders and/or psychopathology (Figure 1).

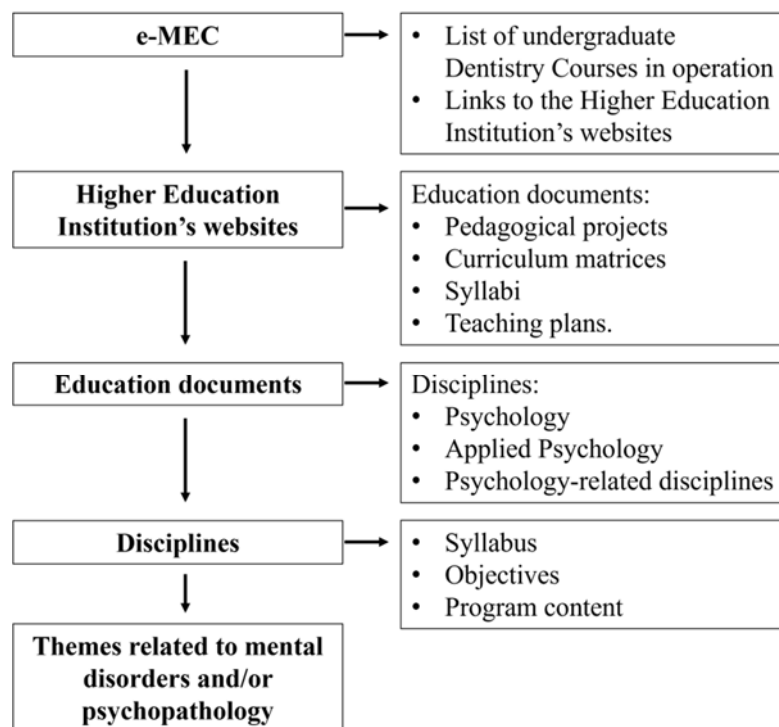


Figure 1. Flowchart of document analysis

Collected data were entered into Microsoft Excel (Microsoft Corp., Redmond, WA), including the name of HEI, city, if HEI was public or private, name of discipline, period of offering, workload, obligatoriness, syllabus, and, when available, objectives and program content. Each evaluator made a preliminary inclusion decision independently, which was posteriorly verified, and, in case of disagreement, the decision was defined by consensus.

Approaches aimed exclusively at the mental health of undergraduates were not considered but only those related to the mental health of patients or professional/patient interaction.

The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), was used as a theoretical reference for defining mental health concepts and classifying mental disorders (American Psychiatric Association, 2013).

3. Results

Eighty-six Dentistry courses operating in Minas Gerais were identified, seven public and 79 private. Thirteen private courses were not started, resulting in 73 courses included for analysis. Most included courses made available their curriculum matrices, containing the names of disciplines and, sometimes, their syllabus. When pedagogical projects were available, they usually encompassed the curriculum matrix and the syllabi of disciplines. They also presented the objectives and program content when teaching plans were available.

Thirty-three private courses did not provide a curriculum matrix, pedagogical project, or syllabus and could not be

evaluated. Of the remaining 40 courses, 34 presented disciplines of Psychology or Psychology-related disciplines (“Applied Psychology,” “Basic psychological processes,” “Behavioral psychology,” “Man, Culture and Society,” and “Comprehensive Health and Expansion of Consciousness,” etc.) in their curriculum (Figure 2). All these disciplines were mandatory except for one course (FAC MAIS Ituiutaba), in which the discipline was elective. Among the six courses that did not present disciplines of Psychology or Psychology-related disciplines, five were private and one public (Universidade Federal de Minas Gerais – UFMG).

The disciplines' workload ranged from 30 hours to 80 hours. Half of them are offered until the middle of the Dentistry course without presenting other disciplines as prerequisites. From the evaluation of documents from these 34 courses, it was observed that only five of them (Universidade Federal de Uberlândia – UFU, Universidade Federal de Alfenas – UNIFAL, Faculdade de Ciências e Tecnologia de Janaúba – FACITEC, Centro Universitário do Triângulo – UNITRI, Universidade Professor Edson Antônio Velano – UNIFENAS) presented any approach regarding psychopathology or mental disorders.

Table 1 describes the five courses that presented disciplines with some approach to psychopathology or that allude to the signs and symptoms of mental disorders in adults. The terms found in their documents that were considered as indicative of the mental disorders approach were: “psychopathology,” “disorder,” “stress,” “fear,” “psychosomatics,” and “mental suffering,” having been identified by consensus between researchers.

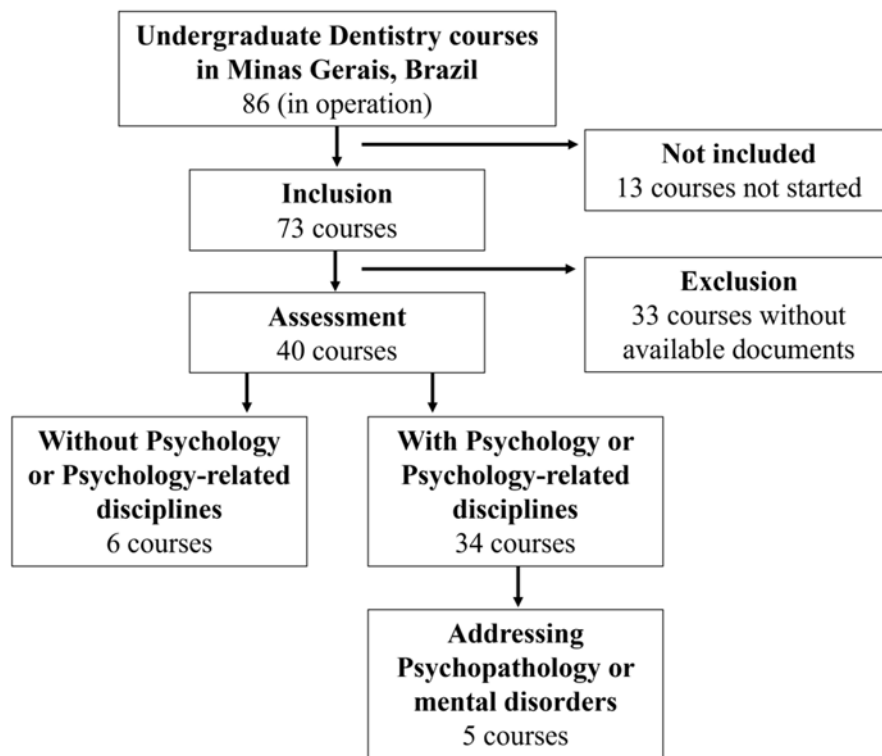


Figure 2. Flowchart of the sampling process for undergraduate Dentistry courses

Table 1. Dentistry courses that present a Psychology or Psychology-related discipline, with some approach to Psychopathology or mental disorders

Institution/ City	Public/ Private	Discipline	Semester/ Workload	Syllabus
Universidade Federal de Uberlândia (UFU) / Uberlândia	Public	Fundamentals of Psychology applied to Dentistry	8° / 30h	Psychological dimensions in Dentistry, mental representations and bases of the adaptive process. Dentist x client relationship.
Universidade Professor Edson Antônio Velano – (Unifenas) / Alfenas	Private	Psychology applied to Dentistry	2° / 33h	The science of Psychology. Psychology in dentistry. Basic view of personality development. Development phases in Psychoanalysis. The psychoanalytic model. Topics focused on clinical practice. Communication skills in the health sector. The special patient. The patient with congenital malformation. Psychology applied to dental areas.
Centro Universitário do Triângulo (Unitri) / Belo Horizonte	Private	Man, culture, society	1° / 80h	Overcoming common sense. The sciences and their foundations. The knowledge. The developments of science in sociopolitical life. Social institutions and different forms of power and control. Dynamicity and polysemy of the concept of culture. Meaning of social and culture. Culturalist approaches: limitations and contributions. Anthropology and politics. Some themes of the so-called anthropology of complex societies. Culture and diversity. Human Development Psychology. Psychological and behavioral processes of the human being. Subjectivity and its constitution and development. Group process and the process of inclusion and exclusion of the individual in the environment. Psychopathologies, their characteristics, triggering, and intervention impact the individual and the environment. Man and his biopsychosocial dimension. Critical reflection on man, culture, society, and science.
Universidade Federal de Alfenas (Unifal) / Alfenas	Public	Psychology applied to Health	3° / 30h	Developmental Psychology: childhood, adolescence, adulthood, old age. Interpersonal relationships. Personality: types and defense and adjustment mechanisms. Psychosomatics.
Faculdade de Ciências e Tecnologia de Janaúba (Facitec) / Janaúba	Private	Behavioral Psychology	3° / 33h	Conceptual foundation and professional stance towards the subjectivities of human actions and possibilities for using this knowledge to minimize the patient's mental suffering in a relationship of trust and respect with the dental professional.

4. Discussion

Most of the dentistry courses evaluated in this study did not include the themes of psychopathology or mental disorders in their pedagogical projects, curriculum matrices, syllabi, and teaching plans. These results suggest that knowledge about mental disorders in adults has not been adequately introduced into dental education despite the evidence of an interaction between oral health and mental health.

Studies assessing dental education' documents regarding their content about patients' mental health are scarce or non-existent. The lack of knowledge and training to identify and refer patients with mental disorders may explain the low confidence, avoidance, and difficulties in clinical practice manifested by dental professionals and undergraduate students, as reported in the literature (Curado & Bastos, 2011; Mattos et al., 2015; Elliot et al., 2020; Berryhill et al., 2024). However, these professionals have demonstrated a disposition to learn and act on mental health care, expressing awareness of their role as part of an interprofessional team (Lloyd-Williams et al., 2001; Berryhill et al., 2024)

The systematic review performed by Häggman-Henrikson et al. (2018) showed that published data on the implementation of screening/assessment of psychological comorbidity in dental and dental hygiene education is

extremely limited. These authors suggested that screening for psychological comorbidity should become part of the educational program.

There is a significant need to update the dental curriculum with skills for addressing the oral health of people with mental disorders, thus reducing inequities in oral health and increasingly improving patient care. Including these skills for dental students can increase this population's comfort and quality of care (Zechner et al., 2022). The challenge is to comprehensively modernize the teaching model focused on diagnosing, treating, and recovering diseases to a model focused on promoting health, preventing, and curing people (Morita & Kriger, 2021). To achieve this, it is necessary to rethink dental education for acting in different environments, not limited to professional isolation and purely technical action (Moura et al., 2019).

Our findings showed that dentistry courses diversely address mental health from different perspectives, often vaguely mentioning some signs and symptoms (stress, fear, anxiety, psychosomatic disorder), which highlights a non-specific and superficial approach to the topic. Mental health is a complex concept, with different approaches from natural sciences (biology, neuroscience, medicine, etc.) and social sciences (psychology, sociology, philosophy, economics, etc.), that is bounded by three dominant paradigms: mental health as the absence of illness, positive mental health, and a state of equilibrium (Coronel-Santos & Rodríguez-Macias, 2022). The World Health Organization defines mental health as “a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community,” a concept that takes away the idea of mental health as the absence of mental illness but has been criticized for suggesting that positive feelings and positive functioning as key factors for mental health (Galderisi et al., 2015). Modern medicine applies the biopsychosocial model, considering the multifactorial interaction of somatic, psychological, and social factors in any illness, disease, or disorder. However, this model has had limited acceptance and use in dentistry (Häggman-Henrikson et al., 2018).

Although Brazilian mental health policy is based on the decentralization of psychiatric care and the development of a diversified network, in which CAPS are linked to PHC, encouraging the work of the interprofessional team, the involvement of dentists is below what could be expected (Curado & Bastos, 2011).

In 2022, the Brazilian RAPS comprised 2836 CAPS units distributed across 1.910 municipalities. However, only 43,8% of PHC teams employed clinical protocols for addressing common mental health conditions, and 32,2% of teams counted on professionals trained to address mental health conditions. On the other hand, 88,5% of the teams counted on matrix-based support to address complex cases (Marchionatti et al., 2023). A multidisciplinary team should be involved in the treatment of mental health disorders and consider oral health care as an essential part of their care for mental health patients (Skallevold et al., 2023).

In this study, a significant number of courses (45.2%) did not make their curricular matrices, pedagogical projects, and syllabi available for public access, which can be a limitation. Our results were based on data available in the official database of courses and HEIs in Brazil, regulated and supervised by the State Education Council, and on the institutions' websites, based on information provided by the HEIs themselves. Although this study has assessed only courses of Minas Gerais, this is the second state with more Dentistry courses in Brazil (13.61%) and presents the higher number of Federal Universities, constituting a representative sample of the entire country.

Considering the high prevalence of mental disorders and their impact on oral health, and the importance of comprehensive health care, the results of this study point out the need to discuss the role of dentists in mental health care and the responsibility of High Education Institutions regarding the development of skills and competencies of these professionals.

In conclusion, most undergraduate Dentistry courses in Minas Gerais, Brazil, do not address the psychopathology or mental disorders in adults. This result may indicate a deficiency regarding this topic in Brazilian dental education. The lack of training of dentists to contribute to mental health care affects both the quality of dental care and referrals for specialized mental health care. Mental disorders affect general and oral health and should not be neglected in dental education.

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Authors' contributions

P.J.T.A., I.M.A.D., E.L.V., and D.R.D. were responsible for the conception and design of the study. P.J.T.A. and D.R.D. were responsible for data collection. Data analysis and interpretation were performed by P.J.T.A., L.S.C.,

E.L.V., F.S.L, and D.R.D. P.J.T.A. and D.R.D. drafted the manuscript. All authors critically reviewed and approved the final manuscript.

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Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

References

- Almeida, J. M. C. (2019). Mental health policy in Brazil: what's at stake in the changes currently under way. *Política de saúde mental no Brasil: o que está em jogo nas mudanças em curso. Cadernos de saude publica*, 35(11), e00129519. <https://doi.org/10.1590/0102-311X00129519>
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA, American Psychiatric Association. Retrieved from [https://repository.poltekkes-kaltim.ac.id/657/1/Diagnostic%20and%20statistical%20manual%20of%20mental%20disorders%20_%20D%20SM-5%20\(%20PDFDrive.com%20\).pdf](https://repository.poltekkes-kaltim.ac.id/657/1/Diagnostic%20and%20statistical%20manual%20of%20mental%20disorders%20_%20D%20SM-5%20(%20PDFDrive.com%20).pdf)
- Berryhill, M. B., Culmer, N., Smith, T., Kopycka-Kedzierawski, D., Gurganus, R., & Curry, G. (2024). Perceptions of mental health screening and referral to treatment in National Dental-Practice Based Research Network practices: A qualitative study. *Journal of Public Health Dentistry*. <https://doi.org/10.1111/jphd.12607>
- Bonadiman, C. S. C., De Azeredo Passos, V. M., Mooney, M., Naghavi, M., & Melo, A. P. S. (2017). A carga dos transtornos mentais e decorrentes do uso de substâncias psicoativas no Brasil: Estudo de Carga Global de Doença, 1990 e 2015. *Revista Brasileira de Epidemiologia*, 20, 191–204. <https://doi.org/10.1590/1980-5497201700050016>
- Brazil. Ministry of Education. (2021). *National Education Concil*. Resolution nº 3. Retrieved from <http://portal.mec.gov.br/docman/junho-2021-pdf/191741-rces003-21/file>
- Brazil. Ministry of Health. (2004). *Mental health legislation: 1990–2004*. Editora MS. Retrieved from https://bvsm.sau.gov.br/bvs/publicacoes/legislacao_saude_mental_1990_2004_5ed.pdf
- Brazil. Ministry of Health. (2017). *Consolidation Ordinance nº 3/GM/MS*. Consolidation of standards on the Unified Health System networks. Retrieved from <https://bvsm.sau.gov.br/bvs/sau/legis/gm/2017/MatrizConsolidacao/Matriz-3-Redes.html>
- Campos, G. W., & Domitti, A. C. (2007). Matrix support and reference team: a methodology for interdisciplinary health work management. *Cadernos de saude publica*, 23(2), 399–407. <https://doi.org/10.1590/s0102-311x2007000200016>
- Choi, J., Price, J., Ryder, S., Siskind, D., Solmi, M., & Kisely, S. (2022). Prevalence of dental disorders among people with mental illness: An umbrella review. *The Australian and New Zealand Journal of Psychiatry*, 56(8), 949–963. <https://doi.org/10.1177/00048674211042239>

- Coronel-Santos, M. A., & Rodríguez-Macías, J. C. (2022). Integral definition and conceptual model of mental health: Proposal from a systematic review of different paradigms. *Frontiers in Sociology, 7*, 978804. <https://doi.org/10.3389/fsoc.2022.978804>
- COVID-19 Mental Disorders Collaborators. (2021). Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet* (London, England), 398(10312), 1700–1712. [https://doi.org/10.1016/S0140-6736\(21\)02143-7](https://doi.org/10.1016/S0140-6736(21)02143-7)
- Curado, T. R. F., & Bastos, E. N. E. (2011). O olhar dos cirurgiões dentistas da Estratégia Saúde da Família para a saúde mental dos usuários. *Cadernos ESP, 5*(1), 44–53.
- Dos Santos Treichel, C. A., Bakolis, I., & Onocko-Campos, R. T. (2021). Primary care registration of the mental health needs of patients treated at outpatient specialized services: results from a medium-sized city in Brazil. *BMC Health Services Research, 21*(1), 1095. <https://doi.org/10.1186/s12913-021-07127-3>
- Elliott, E., Sharma, S., Omar, A., & Hurst, D. (2020). How confidently do students address patients with psychiatric conditions in the dental clinic? A service evaluation in a UK dental school. *British Dental Journal, 228*(5), 376–380. <https://doi.org/10.1038/s41415-020-1319-y>
- Fagundes, G. S., Campos, M. R., & Fortes, S. L. C. L. (2021). Matrix Support in Mental Health: analysis of care provided to people in psychic distress in Primary Care. *Ciencia & Saude Coletiva, 26*(6), 2311–2322. <https://doi.org/10.1590/1413-81232021266.20032019>
- Florjański, W., & Orzeszek, S. (2021). Role of mental state in temporomandibular disorders: A review of the literature. *Dental and Medical Problems, 58*(1), 127–133. <https://doi.org/10.17219/dmp/132978>
- Frimenko, K. M., Murdoch-Kinch, C. A., & Inglehart, M. R. (2017). Educating Dental Students About Eating Disorders: Perceptions and Practice of Interprofessional Care. *Journal of Dental Education, 81*(11), 1327–1337. <https://doi.org/10.21815/JDE.017.090>
- Galderisi, S., Heinz, A., Kastrup, M., Beezhold, J., & Sartorius, N. (2017). A proposed new definition of mental health. *Psychiatria Polska, 51*(3), 407–411. <https://doi.org/10.12740/PP/74145>
- GBD 2019 Mental Disorders Collaborators. (2022). Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Psychiatry, 9*(2), 137–150. [https://doi.org/10.1016/S2215-0366\(21\)00395-3](https://doi.org/10.1016/S2215-0366(21)00395-3)
- Häggman-Henrikson, B., Ekberg, E., Ettlin, D. A., Michelotti, A., Durham, J., Goulet, J. P., ... Raphael, K. G. (2018). Mind the Gap: A Systematic Review of Implementation of Screening for Psychological Comorbidity in Dental and Dental Hygiene Education. *Journal of Dental Education, 82*(10), 1065–1076. <https://doi.org/10.21815/JDE.018.104>
- Hill, K. B., Hainsworth, J. M., Burke, F. J., & Fairbrother, K. J. (2008). Evaluation of dentists' perceived needs regarding treatment of the anxious patient. *British Dental Journal, 204*(8), E13–443. <https://doi.org/10.1038/sj.bdj.2008.318>
- Joury, E., Kisely, S., Watt, R. G., Ahmed, N., Morris, A. J., Fortune, F., & Bhui, K. (2023). Mental Disorders and Oral Diseases: Future Research Directions. *Journal of Dental Research, 102*(1), 5–12. <https://doi.org/10.1177/00220345221120510>
- Kinalski, M. A., Cadermatori, M. G., Horta, B. L., Correa, M. B., Demarco, F. F., & Pereira-Cenci, T. (2019). Common mental disorders and bruxism in adults: a birth cohort study. *Journal of Dentistry, 83*, 27–32. <https://doi.org/10.1016/j.jdent.2019.02.003>
- Lloyd-Williams, F., Dowrick, C., Hillon, D., Humphris, G., Moulding, G., & Ireland, R. (2001). A preliminary communication on whether general dental practitioners have a role in identifying dental patients with mental health problems. *British Dental Journal, 191*(11), 625–629. <https://doi.org/10.1038/sj.bdj.4801252>
- Maragha, T., Donnelly, L., Schuetz, C., von Bergmann, H., & Brondani, M. (2022). Mental health and wellness in Canadian dental schools: Findings from a national study. *Journal of Dental Education, 86*(1), 68–76. <https://doi.org/10.1002/jdd.12768>
- Marchionatti, L. E., Rocha, K. B., Becker, N., Gosmann, N. P., & Salum, G. A. (2023). Mental health care delivery and quality of service provision in Brazil. *SSM-Mental Health, 100210*. <https://doi.org/10.1016/j.ssmmh.2023.100210>
- Mateus, M. D., Mari, J. J., Delgado, P. G., Almeida-Filho, N., Barrett, T., Gerolin, J., ... Saxena, S. (2008). The mental health system in Brazil: Policies and future challenges. *International Journal of Mental Health*

Systems, 2(1), 12. <https://doi.org/10.1186/1752-4458-2-12>

- Mattos, G. C., Gallagher, J. E., Paiva, S. M., & Abreu, M. H. (2015). Perception of ‘comprehensiveness of care’: a qualitative study amongst dentists in the Brazilian Health System. *Brazilian Oral Research*, 29, S1806-83242015000100238. <https://doi.org/10.1590/1807-3107BOR-2015.vol29.0037>
- McCleary, E. E., Rainchuso, L., Vineyard, J., & Giblin-Scanlon, L. (2020). Oral Health Professionals Knowledge, Attitudes and Practices Toward Patients with Depression. *Journal of Dental Hygiene*, 94(5), 6–13.
- Morita, M. C., & Kriger, L. (2004). Mudanças nos cursos de Odontologia e a interação com o SUS. *Revista da ABENO*, 4(1), 17–21. <https://doi.org/10.30979/rev.abeno.v4i1.1495>
- Moura, F. A., Branco, D. C., Santo, T. D. O. C. G., Alves, A. C. B. A., da Silva Kataoka, M. S., Pontes, F. S. C., & do Nascimento, L. S. (2019). Odontologia e saúde mental: experiência do PET Saúde no Centro de Atenção Psicossocial Álcool e Drogas. *Revista da ABENO*, 19(2), 135–143. <https://doi.org/10.30979/rev.abeno.v19i2.747>
- Skallevold, H. E., Rokaya, N., Wongsirichat, N., & Rokaya, D. (2023). Importance of oral health in mental health disorders: An updated review. *Journal of Oral Biology and Craniofacial Research*, 13(5), 544–552. <https://doi.org/10.1016/j.jobcr.2023.06.003>
- Teoh, L., Moses, G., & McCullough, M. J. (2019). Oral manifestations of illicit drug use. *Australian Dental Journal*, 64(3), 213–222. <https://doi.org/10.1111/adj.12709>
- Zechner, M. R., Singhal, V., Murphy, A. A., York, J., Karyczak, S., & Muhammad, A. (2023). Dental pre-doctoral student perceptions about serious mental illness: Concerns and role clarification. *Journal of Dental Education*, 87(5), 639–645. <https://doi.org/10.1002/jdd.13156>

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