


Mental health of dental students: bibliometric study of the Annals of the Meetings of the Brazilian Society of Dental Research


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Abstract This quantitative and retrospective study aimed to investigate the Brazilian scientific production on the mental health of dental students, tracing the profile of the papers presented at the Annual Meetings of the Brazilian Society of Dental Research (SBPqO) in the last five years. Abstracts were included which addressed the mental health of dental students, published in Portuguese or English, and which presented the results of research carried out in the period. The search used the terms "mental health", "students", "stress", "anxiety" and "depressive symptoms". The results were tabulated for final analysis, providing an overview of Brazilian scientific production on the mental health of dental students. Between 2020 and 2024, the research presented at the SBPqO Meetings on the mental health of dental students explored topics such as stress, anxiety, depression, bruxism and the impact of the COVID-19 pandemic. The pandemic significantly influenced studies between 2021 and 2023, highlighting fear of contagion, remote teaching and social isolation. There has been a thematic evolution over the years, addressing academic motivation, medication use and relationships between mental health and physical aspects such as bruxism. In 2023 and 2024, topics such as emotional intelligence and temporomandibular disorders in the post-pandemic gained prominence. Public institutions led scientific production, with the majority of studies classified as observational. The data points to the need for greater regional representation and research that promotes interventions for student well-being, highlighting the relevance of this constantly evolving field.

Descriptors: Mental Health. Students, Dental. Mental Disorders. Bibliometrics.

Salud mental en estudiantes de Odontología: estudio bibliométrico de los Anales de las Reuniones de la Sociedad Brasileña de Investigación Odontológica

Resumen Este estudio cuantitativo y retrospectivo tuvo como objetivo investigar la producción científica brasileña sobre la salud mental de los estudiantes de Odontología, trazando el perfil de los trabajos presentados en las Reuniones Anuales de la Sociedad Brasileña de Investigación Odontológica (SBPqO) en los últimos cinco años. Se incluyeron resúmenes que abordaban la salud mental de los estudiantes de Odontología, publicados en portugués o inglés, y que presentaban resultados de investigaciones realizadas durante el período. La búsqueda utilizó los términos "salud mental", "estudiantes", "estrés", "ansiedad" y "síntomas depresivos". Los resultados fueron tabulados para un análisis final, proporcionando un panorama de la producción científica brasileña sobre la salud mental de los estudiantes de Odontología. Entre 2020 y 2024, las investigaciones presentadas en las Reuniones de la SBPqO sobre la salud mental de estudiantes de Odontología exploraron temas como el estrés, la ansiedad, la depresión, el bruxismo y el impacto de la pandemia de COVID-19. La pandemia influyó significativamente en los estudios entre 2021 y 2023, destacando el miedo al contagio, la enseñanza remota y el aislamiento social. Hubo una evolución temática a lo largo de los años, abordando la motivación académica, el uso de medicamentos y las relaciones entre la salud mental y aspectos físicos, como el bruxismo. En 2023 y 2024, temas como la inteligencia emocional y los trastornos temporomandibulares en el período pospandemia ganaron protagonismo. Las instituciones públicas lideraron la producción científica, con la mayoría de los estudios clasificados como observacionales. Los datos apuntan a la necesidad de una mayor representatividad regional y de investigaciones que promuevan intervenciones para el bienestar de los estudiantes, destacando la relevancia de este campo en constante evolución.

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Descritores: Salud Mental. Estudiantes de Odontología. Trastornos Mentales. Bibliometría.

Saúde mental de estudantes de Odontologia: estudo bibliométrico dos Anais das Reuniões da Sociedade Brasileira de Pesquisa Odontológica

Resumo Este estudo quantitativo e retrospectivo teve o objetivo investigar a produção científica brasileira sobre a saúde mental de estudantes de Odontologia, traçando o perfil dos trabalhos apresentados nas Reuniões Anuais da Sociedade Brasileira de Pesquisa Odontológica (SBPqO) nos últimos cinco anos. Foram incluídos resumos que abordavam saúde mental de estudantes de Odontologia, publicados em português ou inglês, e que apresentavam resultados de pesquisas realizadas no período. A busca utilizou os termos "saúde mental", "estudantes", "estresse", "ansiedade" e "sintomas depressivos". Os resultados foram tabulados para análise final, fornecendo um panorama da produção científica brasileira sobre saúde mental de estudantes de Odontologia. Entre 2020 e 2024, as pesquisas apresentadas nas Reuniões da SBPqO sobre saúde mental de estudantes de Odontologia exploraram temas como estresse, ansiedade, depressão, bruxismo e o impacto da pandemia de COVID-19. A pandemia influenciou significativamente os estudos entre 2021 e 2023, destacando o medo de contágio, ensino remoto e isolamento social. Houve uma evolução temática ao longo dos anos, abordando a motivação acadêmica, uso de medicamentos e relações entre saúde mental e aspectos físicos, como bruxismo. Em 2023 e 2024, temas como inteligência emocional e transtornos temporomandibulares no pós-pandemia ganharam destaque. Instituições públicas lideraram a produção científica, com a maioria dos estudos classificados como observacionais. Os dados apontam a necessidade de maior representatividade regional e de pesquisas que promovam intervenções para o bem-estar dos estudantes, ressaltando a relevância desse campo em constante evolução.

Descritores: Saúde Mental. Estudantes de Odontologia. Transtornos Mentais. Bibliometria.

INTRODUCTION

The mental health of healthcare professionals and students has always been a highly relevant issue and is recognized as a risk factor for other health problems¹. This is largely due to the often stressful nature of both the academic environment and professional practice, which can significantly contribute to the emergence of emotional disorders²⁻⁴.

Health teaching institutions, including those focused on dentistry, have been identified as relevant sources of stress during the academic training period⁵⁻⁷. This context can have a negative impact on students' physical and psychological well-being, leading to increased emotional discomfort. This intense pressure is often associated with unhealthy behaviors, such as tobacco consumption, poor diet, excessive use of alcohol and psychoactive substances, as well as consequences for mental and physical health^{3,4}.

High levels of anxiety and depression are frequently reported among dental students⁴. Moments of transition, such as the move from high school to university, from pre-clinical training to the clinical environment, and then from academic training to the job market, are identified as critical periods that increase the level of stress. In addition, factors such as pressure for academic performance, taking exams, the need to acquire technical knowledge and professional skills, financial worries, sleep deprivation and exposure to the suffering and death of patients have been identified as elements that intensify the negative impacts on students' mental health^{4,7-9}.

Studies investigating mental health are very important, as they provide essential tools to better understand these problems, which are becoming increasingly prevalent in society^{10,11}. Different population groups can show variations in the levels of anxiety and depression symptoms. Thus, the identification of groups with greater susceptibility to

these disorders, through research, generates evidence that helps to scale the magnitude of the problem and understand the specific factors that contribute to its emergence⁶.

Given this context, the aim of this study was to investigate Brazilian scientific production on the mental health of dental students, profiling the papers presented at the Annual Meetings of the Brazilian Society of Dental Research (SBPqO) over the last five years.

METHODS

This is a cross-sectional study with a quantitative approach, based on the analysis of secondary data from abstracts published in the annals of the SBPqO. The abstracts of the last five SBPqO Annual Meetings (2020-2024), available *online* on the event's official *website*, were analyzed. All categories of studies were considered and the data used is publicly accessible. The SBPqO papers were chosen because it is the largest scientific dental event in Brazil.

The stages of the study were carried out separately by two researchers, both previously calibrated postgraduate students.

To select the abstracts, the following search strategy was adopted: using the terms "mental health", "students", "stress", "anxiety" and "depressive symptoms" anywhere in the content of the abstracts available in the proceedings. The search tool made it possible to identify all the abstracts containing these terms, which were then analyzed.

As inclusion criteria, we selected abstracts that clearly addressed the mental health of dental students, presented research results and were published in the annals between 2020 and 2024 in Portuguese or English. The abstracts were taken from the 37th SBPqO Annual Meeting (2020) to the 41st Meeting (2024), with the data organized by year. The search strategy was standardized for all editions. The abstracts that met the criteria were analyzed separately by two researchers, one a graduate student and the other an undergraduate dentist, and the following data was collected: type of study, region of Brazil where the research was carried out (North, Northeast, Midwest, South and Southeast), nature of the institution (public or private) and presence of financial support for the research.

If there were any doubts or disagreements between the researchers, the abstract was re-read by a third evaluator, a professor specializing in the area, who confirmed the subject matter. After this stage, the data collected was tabulated for final analysis.

RESULTS

It was found that of the total of 14,451 abstracts of papers presented at the last five SBPqO Annual Meetings, 31 met the study's inclusion criteria, with five published in 2020, 13 in 2021, seven in 2022, seven in 2023 and four in 2024. The data indicates a wide range of topics covered, with emphasis on stress, anxiety, depression and bruxism, as well as the impact of the COVID-19 pandemic on students' mental health. It can be seen that the pandemic had a significant influence on the studies carried out between 2021 and 2023, with an emphasis on aspects such as fear of contagion, anxiety, mental suffering resulting from remote teaching and the effects of social isolation (Table 1).

Over time, there has been an evolution in the topics investigated. In 2020, studies focused on general aspects such as stress, mental distress and sleep quality. In the following years, especially in 2021 and 2022, there was a significant increase in the number of papers presented, reflecting the impact of the COVID-19 pandemic on students' mental health, with investigations focused on remote teaching, symptoms of mental distress and fear of infecting family members in the academic context. In 2023 and 2024, studies began to explore new horizons, investigating the relationship between mental health and academic performance, emotional intelligence and temporomandibular disorders in the post-pandemic context (Table 1).

Table 1. Abstracts of research on the mental health of dental students presented at SBPqO meetings, according to the year of publication of the proceedings and the topics covered.

MEETING - YEAR	ORDER	THEMES AND TITLES OF ABSTRACTS
37th - 2020		<i>Stress and psychological distress</i>
	1	Estresse e Fatores Associados em Graduandos de Odontologia
	2	Síndrome de Burnout em graduandos de odontologia em um campus em implantação
	3	Sofrimento psíquico em estudantes de odontologia de uma universidade pública do estado do Rio de Janeiro
		<i>Qualidade do sono e fatores emocionais</i>
38th - 2021	4	Efeito do estresse ocupacional na qualidade do sono em estudantes de odontologia
	5	Impacto da necessidade de tratamento ortodôntico, estresse emocional e fatores sociodemográficos na qualidade de sono de universitários
		<i>Impact of the pandemic on mental health</i>
	1	O impacto do covid 19 na qualidade do sono, no grau de estresse e na rotina de estudos dos acadêmicos de odontologia
	2	Impacto da Pandemia da COVID-19 na Saúde Mental e na Motivação Acadêmica entre Estudantes de Odontologia Durante o Ensino Remoto
	3	Prevalência de comportamentos suicidas em estudantes universitários durante a pandemia de COVID-19: Revisão Sistemática e Meta-análise
	4	Depressão e comportamentos suicidas entre estudantes de pós-graduação em Odontologia durante a pandemia de COVID-19
	5	Fatores associados ao alto escore de medo da Covid-19 entre universitários do Sudeste do Brasil
	6	Avaliação dos sintomas de ansiedade e fatores associados em estudantes de odontologia durante a pandemia da Covid-19
	7	Prevalência de Sintomas de Disfunção Temporomandibular, <i>Comportamentos Oraís, Ansiedade e Depressão durante o Isolamento Social</i>
	8	Ansiedade e estresse autorreferidos entre estudantes de odontologia durante a pandemia de COVID-19: um estudo transversal
		<i>Mental and psychosomatic disorders</i>
	9	Prevalência e fatores associados a sintomas depressivos em estudantes de graduação e pós-graduação em odontologia: um estudo transversal
39th - 2022	10	Uso de ansiolíticos/antidepressivos por estudantes universitários no Brasil
	11	Existe associação entre os sintomas depressivos e a sintomatologia da disfunção temporomandibular em estudantes?
	12	Existe associação entre os sintomas depressivos e a relação da disfunção temporomandibular e fatores psicossomáticos em estudantes de odontologia de duas faculdades no estado do Ceará
	13	Estresse no ambiente odontológico e associação com senso de coerência em alunos de graduação e pós-graduação: estudo transversal
		<i>Impacts of the pandemic on mental health</i>
	1	Impacto da pandemia de COVID-19 sobre o sofrimento psíquico de estudantes de Odontologia: um estudo longitudinal
	2	Percepção de estresse de estudantes de odontologia no retorno presencial durante a pandemia de COVID-19
39th - 2022	3	COVID-19: fatores associados ao medo de estudantes de graduação de infectarem a família em decorrência da prática odontológica
	4	Escala de Medo da COVID-19 aplicada a estudantes de graduação em Odontologia
	5	Percepção e o impacto da primeira onda de COVID-19 na saúde mental de estudantes de Odontologia no Brasil
		<i>Ansiedade, depressão, estresse e bruxismo</i>
	6	Avaliação do bruxismo em vigília, ansiedade e depressão em estudantes universitários
	7	Avaliação do bruxismo em vigília e estresse em estudantes universitários durante a pandemia do COVID-19

Continues

Continuation

40th - 2023		<i>Mental health and academic performance</i>
	1	Impacto da saúde mental autorrelatada no desempenho acadêmico de estudantes de odontologia: estudo transversal
	2	Transtornos mentais menores e estresse em estudantes no ambiente odontológico
	3	Desordem Temporomandibular e sua correlação com a saúde mental e qualidade de vida de estudantes no pós-confinamento da Pandemia da COVID-19
	4	Uso de ansiolíticos/antidepressivos por estudantes de pós-graduação no Brasil durante a pandemia <i>Bruxism, anxiety, stress and fear of COVID-19</i>
	5	Os caminhos que explicam a presença de bruxismo do sono, medo da covid-19 e ansiedade em universitários da área de saúde
	6	Correlação entre ansiedade e bruxismo em estudantes universitários
41st - 2024	7	Presença de estresse, de possível bruxismo do sono e em vigília e de medo da COVID-19 em estudantes de Odontologia
		<i>Anxiety and depression in the academic context</i>
	1	Avaliação do medo e ansiedade em estudantes de graduação em Odontologia na clínica de Odontopediatria: um estudo antes e depois
	2	Depressão e autoeficácia entre pós-graduandos de Odontologia em contexto estressor
	3	Análise da ansiedade dos alunos de odontologia da UNIFAL-MG comparando as diferentes especialidades odontológicas
		<i>Emotional intelligence and bruxism</i>
	4	Inteligência Emocional e sua associação com bruxismo e sono em universitários brasileiros durante a pandemia de COVID-19

With regard to the institution, there was a predominance of studies from public institutions, which totaled 27 studies, while private institutions contributed 10 studies in the same period. As for financial support, there was a balanced distribution between studies carried out with and without financial support, with 19 funded studies and 18 not funded (Table 2).

In terms of regional distribution, the Southeast stands out as the main hub of scientific production on the subject, with 20 studies carried out. Other regions, such as the Northeast (8 studies), South (7 studies), Midwest (1 study) and North (1 study), made more specific contributions. As for the type of study, observational studies predominated, with a total of 36 studies in the period analyzed. Only one systematic review study was presented (Table 2).

Table 2. Distribution of scientific papers on the mental health of dental students by institution, financial support, region and type of study (2020-2024).

VARIABLE	YEAR OF MEETING					TOTAL
	2020	2021	2022	2023	2024	
<i>Institution</i>						
Public	3	11	3	5	5	27
Private	2	1	4	3	-	10
<i>Financial Aid</i>						
Yes	2	6	6	2	3	19
No	3	7	1	6	1	18
<i>Region</i>						
Center-West	-	1	-	-	-	1
North East	1	7	-	-	-	8
North	-	-	1	-	-	1
Southeast	3	4	5	4	4	20
South	1	4	-	2	-	7
<i>Type of study</i>						
Systematic review	-	1	-	-	-	1
Observational study	5	12	7	8	4	36

DISCUSSION

The abstracts of the papers presented suggest a growing concern with understanding and coping with psychological distress in the academic environment, especially during the pandemic. The concentration of studies during the COVID-19 pandemic shows the relevant impact of this period on the mental health of dental students, with a focus on topics such as stress, anxiety, depression and bruxism. The findings reflect how the global context has influenced research, reinforcing the concern for students' psychological well-being in this challenging scenario.

In this direction, data from the World Health Organization estimated that symptoms of anxiety and depression increased by around 25% in the first year of the pandemic, according to a survey carried out in 2022¹². The Ministry of Health (MoH) has divided the consequences of the COVID-19 pandemic into four waves, with the fourth wave being the increase in mental disorders and psychological trauma¹³. Possible explanations for this increase include social isolation caused by the pandemic, increased stress, loneliness, fear of being infected, sadness at the loss of family and friends and financial worries¹².

A systematic review and meta-analysis of research on levels of depression among dental students during COVID-19 and which estimated the joint prevalence of this mental disorder, concluded that dental students had higher levels of depression compared to the general population or other university students during the COVID-19 pandemic, with differences between regions¹⁴.

Another meta-analysis on the prevalence of anxiety in dental students identified a reported prevalence of 35% of the disorder in students, regardless of gender, response rate or methodological quality¹⁵. A study of 108 dental students in Trinidad and Tobago, which assessed mental health and coping strategies in relation to COVID-19, identified high levels of stress (59.26%), anxiety (64.81%) and depression (76.85%)⁽¹⁶⁾.

This research found that the studies analyzed also investigated the relationship between mental health and physical factors, such as bruxism, temporomandibular dysfunction and sleep quality, highlighting the complexity of the impacts of this condition in the dental context. These findings suggest a broader understanding of the interactions between mental health and physical factors, in line with the literature that highlights the bidirectional influence between emotional and physiological aspects. A study that investigated the association between sleep quality, levels of depression, anxiety and stress and the frequency of temporomandibular disorders in a sample of 699 Turkish dental students during the COVID-

19 pandemic found a 77.5% incidence of temporomandibular disorders, as well as impaired sleep quality and higher levels of depression, anxiety and stress¹⁷.

One study investigated the relationship between temporomandibular dysfunction, anxiety and sleep disorders in dental students, taking into account the period in which they were enrolled. An association was found between temporomandibular dysfunction, sleep disorders and the period studied, with a higher incidence of moderate and severe anxiety among first-year students. Apprehension about the new influenced the rates of temporomandibular dysfunction and sleep disorders, while greater concern about academic/professional performance led to higher levels of anxiety¹⁸.

In Turkey, a study assessing sleep quality among dental students and identifying psychological factors associated with self-reported sleep bruxism found that psychological factors and sleep quality significantly affected the prevalence of sleep bruxism in the sample investigated¹⁹.

In this research, in the last two years under review, studies have begun to explore new horizons, investigating the relationship between mental health and academic performance, emotional intelligence and temporomandibular disorders in the post-pandemic context. In this direction, a scoping review verified the role of emotional intelligence in academic performance and stress factors among dental students and identified that emotional intelligence had an impact on students' educational success and could be a fundamental tool for dealing with stress and negative emotions²⁰.

The integration between mental health and physical factors identified in the studies under analysis reinforces the need for an integrated and multidisciplinary approach to the care of these undergraduates, including psychological support and targeted clinical interventions. The literature mentions that institutional support, such as access to mental health services and wellness programs, can significantly reduce the rates of anxiety and depression among dental students²¹.

The reduction in studies on the subject in the last year under analysis, post-pandemic, was noteworthy. This finding is relevant because research shows that events such as epidemics, tragedies and wars have impacts on mental health that often outlast the duration of the event itself, resulting in a higher prevalence of mental disorders and substance abuse such as alcohol and drugs²²⁻²⁴. A study mentioned that the consequences of the pandemic could reach a post-pandemic peak, with an emphasis on the risk of suicide, and warned that suicide rates are likely to increase in many countries around the world, aggravating this relevant public health problem²⁵.

The predominance of studies from public institutions reflects the importance of public universities in scientific production on mental health in Brazil. The parity in terms of financial support for research indicates that, although many studies received financial support, a significant number of studies were conducted without direct support, demonstrating the effort of researchers to investigate the subject even in contexts of limited resources.

The regional analysis highlighted the concentration of scientific production in the Southeast, which accounted for 54% of the studies analyzed. This regional inequality can be attributed to the greater concentration of universities and research centers, access to resources and research infrastructure in the region, as well as the concentration of graduate programs with the highest evaluation scores and enrolled students and CNPq research productivity grants^{26,27}. These aspects point to the need for greater inclusion of perspectives from other regions, particularly those with less academic representation.

Another relevant point is the predominance of observational studies, which reflects a gap in the implementation of more robust methodologies, such as clinical trials or intervention studies. The identification of only one systematic review study in the period indicates the need to synthesize existing knowledge on the mental health of dental students in order to guide evidence-based practices. Although observational studies offer valuable insights, they do not allow us to assess causality or measure the impact of interventions, which limits their practical applicability^{28,29}.

The interpretation of the results of this study must take into account its limitations, including the impossibility of delving deeper into the methodological aspects and complete results of the studies, since the abstracts presented in the annals provide succinct information, which can restrict a detailed understanding of the methods and findings of the studies. It should be noted, however, that this study offers a valuable initial overview of Brazilian scientific production related to the mental health of dental students, identifying trends, gaps and regional inequalities, contributing to reflection on a relevant and emerging topic.

The results highlight the relevance of research into mental health in the dental environment, with an emphasis on public institutions, the Southeast region and the predominant use of observational methodologies. However, there is a need to encourage studies in less represented regions and to increase the number of systematic reviews, with the aim of integrating and consolidating existing knowledge and guiding new research in the field.

The findings point to a promising and constantly evolving field of research, with emphasis on the need for interventions aimed at the well-being of dental students. Future investigations could benefit from longitudinal methodologies that assess changes in mental health throughout the course, as well as including institutional and contextual factors such as workload and academic support. The relevance of discussions on mental health in the dental environment is evident, and the results obtained in this study provide important input for the development of strategies to promote students' health and quality of life.

CONCLUSION

This study shows that the Brazilian dental academic community is paying increasing attention to students' mental health, especially during and after the COVID-19 pandemic. Although only a small fraction of the abstracts published at SBPqO meetings between 2020 and 2024 directly addressed this topic, there was a significant increase in studies in the most critical years of the pandemic (2021 and 2022), with topics related to stress, anxiety, depression, bruxism and remote teaching. The predominance of observational studies from public institutions in the Southeast reflects a national trend of concern about students' psychological well-being. The pandemic context was decisive in boosting scientific production in the area, and the most recent studies point to a diversification of themes, including academic performance and emotional intelligence. These data highlight the need for institutional policies to welcome and promote mental health in higher education in Dentistry.

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