




THE QUALITY OF INFORMATION ON THE INTERNET ABOUT BRUXISM

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ABSTRACT

Objective: To evaluate the quality of the information found on Google about bruxism. **Method:** We sought to evaluate the information on bruxism present on health websites on the internet. The information was found through the strategy of the Google "search engine" where the single term bruxism was inserted. The first fifty websites of clinics, offices, newspapers, online magazines and health websites in general were considered and evaluated. Websites of dental scientific journals or dental schools, content from Youtube, Instagram and Facebook were excluded. The evaluation was based on studies by Mendonça (2013) of comprehensiveness and accuracy. **Results:** Regarding the indexes of the survey related to comprehensiveness, it can be seen that 60% of the sites had a positive perception against 40% negative. Regarding accuracy, it was found that the sites presented only 10% of reliability in the information. And in general, it was noticed that 57% of the websites do not have information about bruxism with the required criteria in scope and accuracy according to the study by Mendonça (2013). **Conclusion:** Websites containing information about bruxism are not reliable, and the dentist is safer for correct evaluation, diagnosis and treatment when the patient suspects a possible diagnosis of bruxism.

Keywords: Bruxism. Internet. Knowledge.

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INTRODUCTION

Bruxism is a repetitive activity of the masticatory muscles, which is a risk factor for various health complications, characterized as an act of clenching or grinding the teeth, which can be defined in two types: sleep bruxism and wakefulness bruxism, also called daytime. In addition, most people who have it are unaware of the causes, consequences, and main treatments, causing them to search for this information on the internet and before looking for a qualified professional for such evaluation and diagnosis (BULANDA et al., 2021)

Kuang et al. (2022) report that early diagnosis of bruxism and identification of risk factors are important for inhibition of craniofacial changes, as well as for pain relief, restoration of lost structures, and repair of facial lesions.

Regarding treatment, Lobbezoo et al. (2008) report that there is little research and scarcity in the standardization of treatment according to each patient and the level of bruxism presented. This raises doubts about the type of treatment, which should often be multidisciplinary. Therefore, it emphasizes the importance of studies on the proper management of patients with bruxism.

Due to the difficulty of adequately managing patients with bruxism, Souza (2008) reports that many people seek information on the internet to try to identify the health problem and the best form of treatment. However, much of this information found on internet pages and websites is transmitted inappropriately, which hinders the diagnosis and proper treatment of the disease.

A study by Alves et al. (2019) indicates that parents and caregivers have insufficient knowledge about the etiology of bruxism, which can make it difficult to seek help and, thus, contribute to the exacerbation of bruxism and its complications in adult life.

Pereira Neto (2013) reports that on the internet we can find information from private and public institutions created by professionals or patients, since it can be posted and disseminated without any type of content analysis. Therefore, this information posted may be incomplete or incorrect or even correct, but the reader may not know how to correctly interpret the content and have a mistaken understanding of the subject.

According to Barbosa et al. (2007), several studies indicate that the information on the internet is not complete, often confusing or even wrong, which can result in self-medication and delay in diagnosis by a professional in the area.

In view of the above, this study aims to evaluate the quality of information found on the internet about bruxism through Google and thus verify the impact of this information on the diagnosis, treatment and guidance to the patient.

LITERATURE REVIEW

Bruxism is a repetitive activity of the masticatory muscles characterized by clenching or grinding of the teeth and that can have two distinct manifestations: sleep bruxism, or awake bruxism. It occurs with a prevalence in adulthood ranging from 8 to 31% and has acquired considerable relevance due to its association with dental abrasions and mobility, fracture of dental restorations, hypertrophy of the masseter muscle, and myalgia or arthralgia characteristic of temporomandibular disorders (TMD), among other signs and symptoms (FERNANDES-NÚÑEZ et al., 2019).

Ronald et al. (2017) state that bruxism is a relatively common habit that often results in the need for dental treatment, and to aggravate the problem, there is a lack of specific awareness for clenching and grinding the teeth awake.

Bruxism may arise spontaneously and/or may occur at an older age, but it is generally less commonly observed among the elderly. There is some evidence that bruxism may be associated with the use of antidepressants. A study by Garret et al. (2018), for example, showed the onset of bruxism within four months after antidepressant use, in most patients who used the medication. In this same study, bruxism can be related to gender, marital status, employment status, or smoking.

Manfredini et al. (2021) report that there are indications of bruxism as an adverse effect of several medications, as well as some substances that cause dependence. According to other authors, such as Giovanni and Giorgia (2021), they state that little is known about the complex relationship between drugs and bruxism; However, it should be noted that some agonist substances (alcohol, amphetamines and methylphenidate, heroin, anticonvulsants and selective serotonin reuptake inhibitors) favor sleep bruxism while other antagonists (clonidine, levodopa, clonazepam, gabapentin, hydroxyzine and dopamine agonists) reduce.

According to Chemelo et al. (2020), bruxism is associated with different behaviors such as smoking, high consumption of alcohol and coffee in excess, sleep apnea syndrome, anxiety disorder, depression, respiratory diseases. In addition, emotional changes can be associated with bruxism.

One of the causes of bruxism may be related to psychosocial stress. This type of stress is induced by situations of social threat, including social evaluation or exclusion. Psychological and psychosomatic symptoms are related to stress in occupational exposure, anxiety and depression, periodic headaches, and oral dysfunctions. Bruxism occurs as a result of the abnormal state of the body such as stress, leading to an increase in muscle tone and teeth grinding. It is generally accepted that stressful situations and diseases lead

to the development of occlusal parafunction and temporomandibular disorder. Chemelo et al. (2020) state that bruxism, one of the common parafunctional habits, has psychosocial, emotional, and psychological characteristics as a triggering risk factor.

According to Bulanda et al. (2021) the diagnosis and clinical evaluation of bruxism is usually a complex process and requires many tests to be performed, including subjective observations and analysis of medical history, clinical examination, evaluation with intraoral devices, recording of muscle activity, electromyography (EMG).

The diagnosis of bruxism can be made by self-report and clinical examination, but these methods have little agreement with polysomnography. Two portable electromyography and electrocardiography machines can also be used to diagnose, but are indicated only for primary sleep bruxism. Polysomnography is considered the gold standard and also indicated for secondary sleep bruxism, however it is expensive and time-consuming (PIGOZZI et al., 2019).

As reported by Demjaha et al. (2019) says that tooth mobility, pain, facial hypertrophy of the muscles, and reduced ability to open the patient's mouth after waking up in the morning are changes that are observed. Frequent headaches, especially in the temporomandibular region in everyday life are often noticed. Other clinical signs in patients with bruxism are fractures of the teeth or restorations, prostheses and crowns that suffer frequent damage.

According to Bulanda et al. (2021), the treatment of bruxism is challenging and requires the cooperation of the doctor, family members, and patient. It should be treated with physical therapy, kinesiotherapy, massage, infrared therapy, and low-level laser therapy, which is non-invasive, cost-effective, painless, and requires less time. In addition, dental treatment for bruxism involves wearing occlusal appliances during sleep to protect the teeth from pathological abrasion. Reports also indicate that orthodontic procedures aimed at jaw enlargement are performed to reduce the incidence.

Fernández-Núñez et al. (2019) reported that botulinum toxin can be applied in improving the condition of bruxism. This toxin can inhibit neuromuscular transmission, which justifies its clinical application in the treatment of bruxism, since recent scientific evidence indicates that bruxism has a multifactorial etiology mediated by the central and autonomic nervous system, which regulates the motor activity of the masticatory muscles. Therefore, it is a satisfactory form of therapy contributing to mitigate the effects of bruxism, improving the patient's quality of life. The use of the toxin as an auxiliary method in relieving symptoms and not the only treatment is emphasized.

METHODOLOGY

The methodology used in this study sought to evaluate the information on bruxism found on health websites on the internet. This information was found through the Google "search engine" strategy, in which three computers were used to insert the single term bruxism. Websites of clinics, offices, newspapers, online magazines and health websites in general were considered. Websites of dental scientific journals or dental schools, content from Youtube, Instagram and Facebook were excluded.

The first fifty sites that appeared in the search were considered and evaluated. The evaluation was based on studies by Mendonça (2013) of comprehensiveness and accuracy, as shown in table 1:

Table 1: Evaluation of the information found on websites.

SCOPE	YES	NO
Does the site have information about diagnosing bruxism?		
Does the website explain and present the types of bruxism and the forms of control for each type?		
Does the site present information about the consequences of bruxism and the importance of controlling it?		
Does the site present the advantages and/or disadvantages of each form of control?		
Does the website present information about possible risk factors for bruxism and causes?		
Does the site provide guidance on which professional should the patient seek for diagnosis and control of bruxism? Which professional?		
ACCURACY		
Is the content scientifically based on studies, research, protocols, consensuses, or clinical practice?		
Does the website present the sources that support the available information?		
Are the sources of widely recognized origin and with a good reputation?		

Source: Researcher, 2024.

The item comprehensiveness was evaluated through 06 questions and accuracy through 03 questions. Records on forms of control, diagnosis, classification and treatment of bruxism were noted on each website to identify the quality of the information passed on about the disease.

After collecting the data, quantitative analysis of the answers was performed and graphs were generated using the Excel program for analysis of the results.

RESULTS

By analyzing Graph 1 below referring to the coverage of the theme, in which the most relevant aspects are verified, such as the look of the site and resources available for navigation, that is, accessibility and access, we can see a positive evaluation in the evaluated sites.

Regarding question 01, which evaluates whether the site presents any information about the diagnosis of bruxism, 90% had this information and 10% did not present any information.

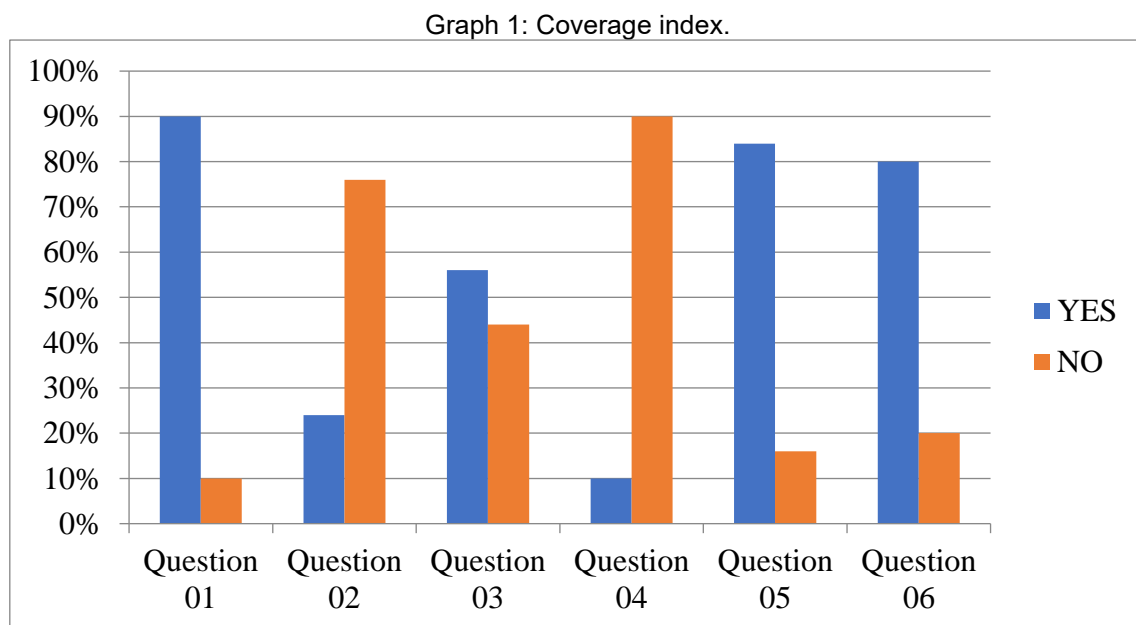
In question 02, when analyzing whether there was information about the types of bruxism and the forms of control, we can see a negative evaluation when only 24% of the sites presented this information, while 76% did not.

Question 03, when checking if there was information about the consequences and importance of controlling bruxism, 56% presented this information and 44% of the sites did not.

In question 04 about the advantages and disadvantages of the forms of bruxism control, only 10% of the sites presented this information, while the majority of 90% did not, perceiving an unsatisfactory analysis in the sites identified in the study.

Regarding question 05, when checking the information about the possible risk factors for bruxism and cause, it can be seen that most of the websites presented this information, with 84% and 16% not presenting it.

The last question about the detection of information about which professional the patient should look for to consult and have the diagnosis and control of bruxism, 80% indicated the dental surgeon, while other sites (20%) did not mention any professional.



Caption: Question 01: Does the site present information on the diagnosis of bruxism?

Question 02: Does the website explain and present the types of bruxism and the forms of control for each type?

Question 03: Does the site present information about the consequences of bruxism and the importance of controlling it?

Question 04: Does the site present the advantages and/or disadvantages of each form of control?

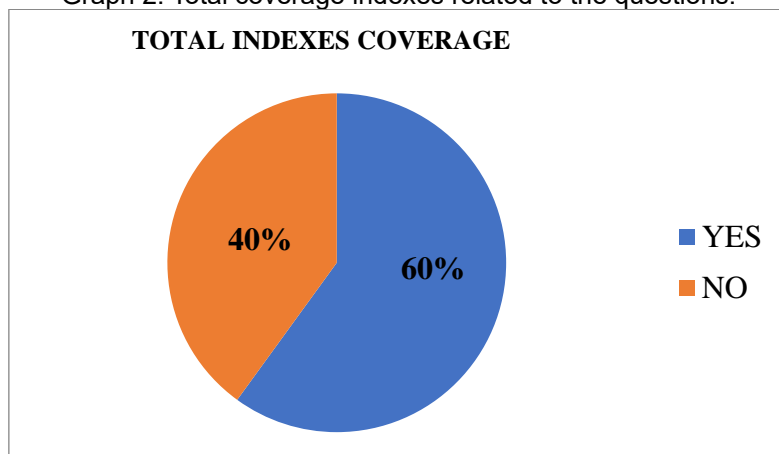
Question 05: Does the website present information about possible risk factors for bruxism and causes?

Question 06: Does the website provide guidance on which professional should the patient seek for diagnosis and control of bruxism?

Source: Researcher, 2024.

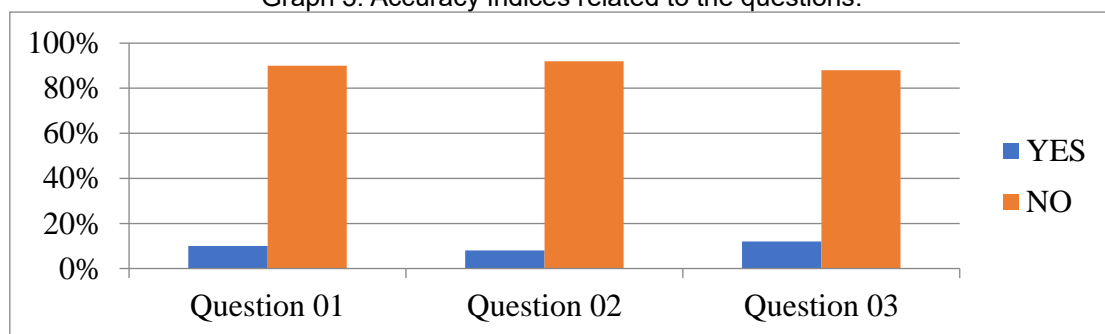
When we make a general analysis of the indexes of the survey related to coverage, we can see that 60% of the sites had a positive percentage against 40% negative (Graph 2). Thus, it is perceived that in most of the sites under study there is unsatisfactory information on the subject, contributing to doubts and inappropriate interpretations for people who seek information, which does not contribute to the adequate management of bruxism.

Graph 2: Total coverage indexes related to the questions.



Source: Researcher, 2024.

Graph 3: Accuracy indices related to the questions.



Caption: Question 01: Is the content scientifically based on studies, research, protocols, consensus, or clinical practice?

Question 02: Does the website present the sources that support the available information?

Question 03: Are the sources of widely recognized origin and with a good reputation?

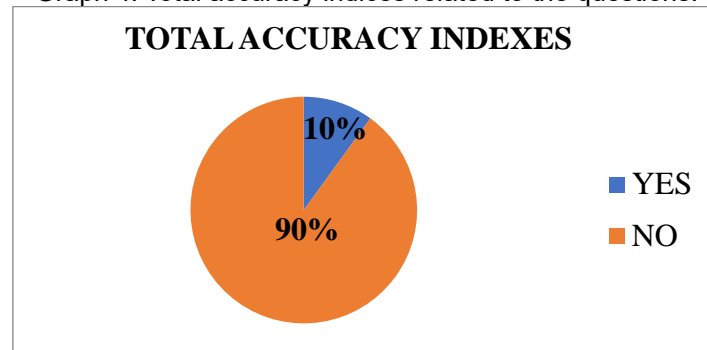
Source: Researcher, 2024.

When analyzing the indices referring to accuracy (Graph 3), we can perceive a very negative percentage in the research, starting with question 01, in which it analyzes whether the information found on the websites has a basis for study, protocols, consensus or clinical practice. Considering this, only 10% were analyzed positively against 90% negatively.

Regarding question 02, which analyzed whether the site presented the sources that supported the information were available, only 8% gave a positive evaluation, against 92% in the negative form.

And finally, in question 03, analyzing whether the sources were of recognized origin and of good reputation, only 12% were analyzed positively and 88% negatively.

Graph 4: Total accuracy indices related to the questions.

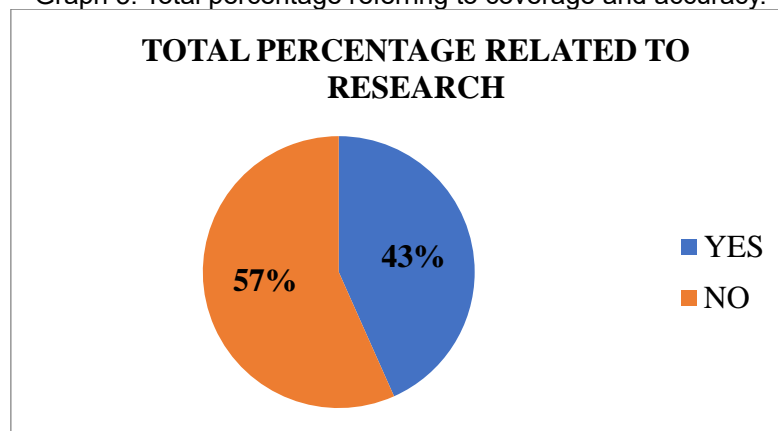


Source: Researcher, 2024.

In graph 4 above, when we analyze the three questions of the research in relation to accuracy, we found that the sites presented only 10% of reliability in the information.

And, finally, analyzing the entire survey in general, we can see that 57% of the websites do not have information on bruxism with the required criteria in scope and accuracy according to the study by Mendonça (2013), as shown in Graph 5.

Graph 5: Total percentage referring to coverage and accuracy.



Source: Researcher, 2024.

DISCUSSION

According to Mendonça (2013), there is no guarantee that the sites comply with the rules of information quality, for this reason we can see this unreliability in the sites with information about bruxism despite 43% of the sites evaluated being in a positive situation, it does not mean that the patient when looking for information on the subject on the internet will have a safe and effective search.

Bronda (2022) also states that on the internet there is a large amount of information, however disorganized and largely unreliable due to the lack of standardization of evaluation and inspection for this information to be posted.



When we analyze the general result of the survey in reaction to the scope, we can see that although the positive percentage was higher than the negative, 60% against 40%, respectively, we can say that there are still many sites with complete information on the sites, as stated by the authors above.

Adams (2003) also states that online information has long become a health concern and although technology helps in the search and ease of searching for information, many of them do not present safe information, sources that provide adequate references, standards designed for patients.

By virtue of Adams' (2003) analysis, we should be concerned with the indices indicated in the accuracy graphs having 90% disapproval. A really worrying fact, since this results in an unreliability in research carried out on the internet and related to bruxism.

In the study carried out by Gagliardi et al. (2002), several sites that had a classification instrument with the ability to evaluate the quality of the information on the sites were evaluated, however, according to the author, none of the 05 methods had been validated so that the Internet user could have this tool to help choose a safe and complete site for their health-related research topic.

CONCLUSION

The information found on the internet about bruxism, according to the research carried out, may be of low quality, depending on the site searched. Therefore, it has a dubious and not reliable enough source, often outdated and without a reliable source. In addition, according to the authors cited in the discussion, there are no incentives for authorities to seek certification or quality seal for trusted sites.

Thus, the ideal would be for the Federal Council of Dentistry to seek, together with other health councils, political incentive to create a national seal to evaluate safe sites with information on health topics.

The lack of correct information can cause the patient who could seek a dentist for bruxism treatment or another health professional, since the treatment of bruxism is multi-disciplinary, to make him not seek this service and self-medicate or try to form incorrect treatment due to the diagnosis and/or incorrect information found on the internet.

Thus, in this research it was identified that the websites containing information about bruxism are not reliable, and the dental surgeon is safer for correct evaluation, diagnosis and treatment when the patient suspects a possible diagnosis of bruxism.



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