



Reliability and quality of videos available on YouTube™ on bruxism

Confiabilidade e qualidade dos vídeos disponíveis no YouTube™ sobre bruxismo

Fiabilidad y calidad de los vídeos disponibles en YouTube™ sobre bruxismo

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ABSTRACT

Objective: To evaluate the reliability and quality of YouTube™ videos about bruxism. Methods: Google Trends was used to determine the widely used search term on YouTube™. A playlist was created (N=100) and the number of views (NV), like/dislike (G/NG), presenter, treatments, interaction rate (TI) and views (VZ), the quality criteria for consumer health information (DISCERN) and the global quality scale index (GQS) were used. Spearman's correlation coefficient was calculated. Results: 88 videos with NV 30572.72 and G/NG 1153.76/18.31; 68 (77.3%) presenters were dentists. The most cited treatment was muscle-relaxing plates; TI was 6.4 and VZ was 3658.5. Reliability was 2.82 (±0.852); 21 (23.9%) were of good/excellent quality. A weak correlation between reliability/NV (rs=-0.254), the GQS/likes (rs=0.270) and the GQS/dislikes (rs=0.292). Conclusion: Content about bruxism on YouTube™ is diverse. Most of the content is presented by dentists. The information provided is moderately reliable.

Keywords: Bruxism; YouTube™; social media.

RESUMO

Objetivo: Avaliar a confiabilidade e a qualidade dos vídeos do YouTube™ sobre bruxismo. Métodos: O Google Trends foi utilizado para determinar o termo amplamente utilizado para a busca no YouTube™. Uma lista de reprodução foi criada (N=100) e o número de visualizações (NV), gostei/não gostei (G/NG), apresentador, tratamentos, taxa de interação (TI) e visualizações (VZ), os critérios de qualidade para informações de saúde do consumidor (DISCERN) e o índice da escala global de qualidade (GQS) foram utilizados. O coeficiente de correlação de Spearman foi calculado. Resultados: 88 vídeos com NV 30572,72 e G/NG 1153,76/18,31; 68 (77,3%) apresentadores eram dentistas. O tratamento mais citado foram as placas mio-relaxantes; TI foi de 6,4 e a VZ foi de 3658,5. A confiabilidade foi de 2,82 (±0,852); 21 (23,9%) eram de qualidade boa/excelente. Uma correlação fraca entre confiabilidade/NV (rs=-0,254), o GQS/gosta (rs=0,270) e o GQS/não gosta (rs=0,292). Conclusão: O conteúdo sobre bruxismo no YouTube™ é diversificado. A maior parte do conteúdo é apresentada por dentistas. As informações fornecidas são moderadamente confiáveis.

Descritores: Bruxismo; YouTube™; mídia social.

RESUMEN

Objetivo: Evaluar la confiabilidad y calidad de los videos de YouTube™ sobre bruxismo. Métodos: Se utilizó Google Trends para determinar el término de búsqueda más utilizado en YouTube™. Se creó una lista de reproducción (N=100) y el número de vistas (NV), me gusta/no me gusta (G/NG), presentador, tratamientos, tasa de interacción (TI) y vistas (VZ), los criterios de calidad para la información de salud del consumidor (DISCERN) y el índice de escala de calidad global (GQS). Se calculó el coeficiente de correlación de Spearman. Resultados: 88 vídeos con NV 30572,72 y G/NG 1153,76/18,31; 68 (77,3%) presentadores eran dentistas. El tratamiento más citado fueron las placas relajantes-musculares; TI fue 6,4 y VZ fue 3658,5. La confiabilidad fue 2,82 (±0,852); 21 (23,9%) fueron de buena/excelente calidad. Una correlación débil entre confiabilidad/NV (rs=-0,254), GQS/G (rs=0,270) y GQS/NG (rs=0,292). Conclusión: El contenido sobre bruxismo en YouTube™ es diverso. La mayor parte del contenido es presentado por dentistas. La información proporcionada es moderadamente confiable.

Descriptores: Bruxismo; YouTube™; Medios de Comunicación Sociales.

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INTRODUCTION

Bruxism is defined as a rhythmic or non-rhythmic masticatory muscular activity rather than a movement disorder. It may occur during sleep (sleep bruxism) and/or wakefulness (awake bruxism)⁽¹⁾. It is considered an oral habit with parafunctional destructive effects that can affect the teeth, periodontium, and temporomandibular joints⁽²⁻⁴⁾.

In the 21st century, connectivity, competitiveness, and new ways of working and studying have increased human stress and anxiety. Bruxism has increased correspondingly, resulting in greater interest in platforms that contain content about the signs and symptoms of the condition^(5, 6).

Social networks and platforms such as YouTube™ have become important tools in the dissemination of information about bruxism^(7, 8). YouTube™ is the most popular video-sharing site. It is increasingly used to disseminate plain-language health information and is particularly useful for reaching people who do not have access to the results of scientific studies^(5, 6, 9, 10). However, the uneven quality of the information available on YouTube™ is a growing concern. The lack of control over the content of the videos can lead to the dissemination of outdated or false information, making it exceedingly difficult to deliver optimal health-related services⁽¹⁰⁾.

The substantial growth in the use of the Internet to retrieve health information⁽⁸⁾ and the risks inherent in this process due to the uneven quality of the information available, led us to conduct the present study to evaluate the content, reliability, and quality of YouTube™ videos in Portuguese on bruxism.

MATERIALS AND METHODS

Identification of search terms

The Google Trends website (<https://trends.google.com.br>) is a Google tool that shows the most popular search terms on any given subject. In the recent past, the most popular search terms related to bruxism included “bruxism,” “dental bruxism,” “nocturnal bruxism,” “teeth grinding,” “teeth grinding while sleeping,” and “clenching.” We searched for the Brazilian Portuguese equivalents of these terms using the criteria “Brazil” and “last 5 years” “all categories” and “web search”⁽¹¹⁾. We compared the results of the searches and found that the most commonly used search term for bruxism was the term itself (Google Trends, October 7, 2021).

Search YouTube™ for bruxism videos

Before conducting our search, we deleted cookies and the previous search results. The search for videos was carried out directly on the YouTube™ website (<https://www.youtube.com>)⁽¹¹⁾. We did not restrict the results by date or video quality, but we limited our search to videos

lasting between 4 and 20 minutes, according to Ahmad et al (2021)⁽¹²⁾, videos lasting less than three minutes were insufficient and/or incomplete. As the search results obtained can change over time, we created and saved a playlist of the videos from the first 10 pages returned by the search, which corresponded to the first 100 videos.

Eligibility criteria for videos

We only included videos that were in Portuguese, had audio available, and had bruxism as their main theme.

Data extraction

For each video, we analyzed the number of views, likes and dislikes, and comments; and identified the profession of the presenter, the treatment mentioned most frequently, and the video interaction rate. We also calculated the viewing rate for each video according to the formula described below⁽¹¹⁾.

$$\text{Interaction index (\%)} = \frac{\text{number of likes} - \text{number of dislikes}}{\text{number of views}} \times 100$$

$$\text{Viewing rate (\%)} = \frac{\text{number of views}}{\text{number of days since upload}} \times 100$$

Quality Criteria for Consumer Health Information (DISCERN)

To assess the reliability of the information, a modified DISCERN form was used according to the study by Ustdal and Guney (2020) and Singh et al (2012)^(11, 13), consisting of five questions and a scale from 0 to 5 points. These instrument aims to evaluate the quality of information described about consumer health regarding treatment options. Each “no” answer was given a value of 0 and each “yes” answer a value of 1. The questions were as follows⁽¹⁴⁾:

- (a) Are the aims clear and achieved?
- (b) Are reliable sources of information used? (i.e., publication cited, speaker is a dentist)
- (c) Is the information presented balanced and unbiased?
- (d) Are additional sources of information listed for patient reference?
- (e) Are areas of uncertainty mentioned?

Two evaluators (MANS and LSLS) independently rated reliability. Any disagreements were discussed at a meeting until a consensus was reached.

Global Quality Scale Index (GQS)

To evaluate the quality of the videos, the global quality scale was used. In addition to overall quality, this index considers the flow of a video and whether it is easy to understand. It consists of a Likert scale with five possible ratings⁽¹⁵⁾:

- (1) Poor quality, poor flow of the video, most information missing, not at all useful for patients

(2) Generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients

(3) Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients; GQS indicates global quality scale

(4) Good quality and generally good flow, most of the relevant information is listed but some topics not covered, useful for patients

(5) Excellent quality and flow, very useful for patients

Video quality, like video reliability, was assessed by two evaluators (MANS and LSLS) independently. Disagreements were discussed and resolved at a meeting until a consensus was reached.

Statistical Analysis

Data extracted from the videos were tabulated on Microsoft Excel® 2016 and analyzed at SPSS version 21.0 (Chicago, USA). The normality test was evaluated through Shapiro-wilk test. Spearman’s correlation coefficients were also calculated to evaluate a possible correlation between GQS, reliability score and video content.

Videos that did not provide the necessary information were not excluded from the analysis.

RESULTS

In a search using the selected terms, 5520 videos were returned by YouTube™. Of those, the first 100 results were saved in a playlist. Twelve were excluded because they were duplicates (n=4), not about bruxism (n = 5), unavailable (n = 2), or had unavailable audio (n=1). We evaluated the remaining 88 videos about bruxism.

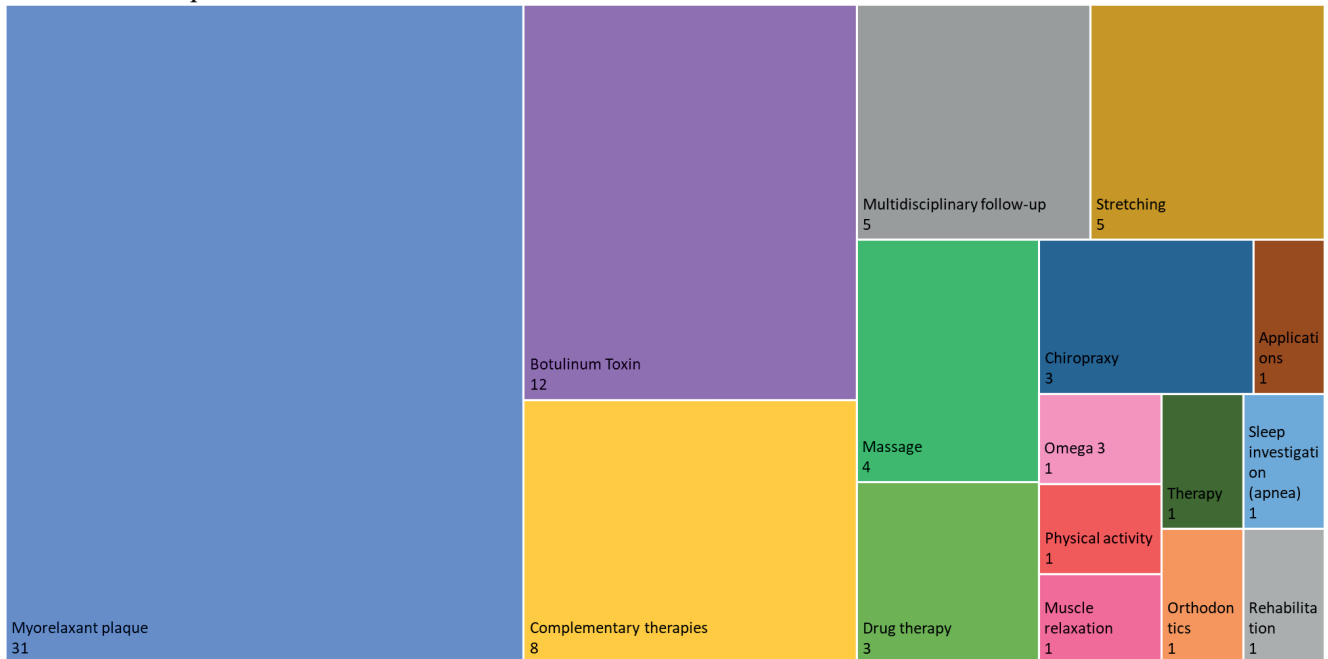
The mean numbers of video views, likes, dislikes, and comments were 30572.72, 1153.76, 18.31, and 69.93, respectively. The mean interaction rate was 6.4, and the mean view rate was 3658.5 (Table 1). Among the professionals who provided the information in the videos, 68 (77.3%) were dentists, 9 (10.2%) were physical therapists, and 3 (3.4%) were doctors (Table 2). Multiple therapeutic possibilities were mentioned in 51 videos (58%). The most commonly mentioned treatments were myorelaxant plates (n=31), botulinum toxin (n=12), multidisciplinary follow-up (n=5), stretching (n=5), massage (n=4), and drug therapy (n= 3). The other therapies mentioned in the videos are listed in table 3.

Table 1: Descriptive analysis of rated videos

Variables	Minimum	Maximum	Mean	SD
Video characteristics				
No. of views	8	925.116	30572.72	105103.076
No. of likes	0	26.000	1153.76	3155.683
No. of dislikes	0	454	18.31	54.355
No. of comments	0	875	69.93	153.005
Video length (minutes)	0	374	13.40	42.098
Days since upload	41	7.005	1081.40	1083.058
Interaction index (%)	0.51	99.00	6.4238	11.16624
Viewing rate (%)	4.59	72843.77	3658.5042	11063.63953
DISCERN	0	4	2.82	0.852
GQS	1	5	2.89	0.964

Table 2: Frequency of professionals who present the videos

Professionals	No. (%)
Dentist	68 (77.3)
Doctor	3 (3.4)
Physical therapist	9 (10.2)
Psychologist	2 (2.3)
Physical educator	1 (1.1)
Doctor and dentist	1 (1.1)
Youtuber	1 (1.1)
Yogorin	1 (1.1)
Pharmaceutical	1 (1.1)
Layman	1 (1.1)

Table 3: Therapies for bruxism most cited.

NOTE: Complementary therapies (Homeopathy n=2; Acupuncture n= 1; Aromatherapy n=1; Tea n= 1; Herbal therapy n= 1; Laser therapy n= 1; Essencial oils n=1).

Most of the videos (56; 63.6%) provided balanced and unbiased information. Thirteen (14.8%) did not provide additional references, 11 (12.5%) used reliable sources to report information on the topic, and 6 (6.8%) clearly addressed the objectives proposed in the video. Two videos (2.3%) received a reliability rating of 0, so it was not possible to evaluate them. The mean reliability of the videos was 2.82 (SD = 0.852; minimum = 0; maximum = 4; median = 3). Based on the GQS scores, 31

videos (35.2%) were bad or of generally poor quality, 36 (40.9%) were of moderate quality, and 21 (23.9%) were of good or excellent quality.

There was a weak negative correlation between reliability and the number of views ($r_s = -0.254$; $P < 0.05$) and weak positive correlations between the GQS score and likes ($r_s = 0.270$; $P < 0.05$) and between the GQS score and dislikes ($r_s = 0.292$; $P < 0.01$) (Table 4).

Table 4: Correlation Spearman coefficients between GQS score, reliability (DISCERN) score and video demographics

Variables	Reliability (DISCERN)	GQS	No. of views	No. of likes	No. of dislikes	No. of comments	Video length	Days since upload
Reliability (DISCERN)	1	0.173	-0.254*	-0.151	-0.121	-0.021	-0.152	0.001
GQS	0.173	1	0.172	0.270*	0.292**	0.123	0.190	0.09

NOTE: GQS (Global quality scale); * $P < 0.05$; ** $P < 0.01$

DISCUSSION

Few studies^(9, 16-18) have evaluated the content, reliability, and quality of the videos on bruxism that are available on YouTube™. We analyzed those in our native language, Brazilian Portuguese, to ensure that our evaluations were accurate and identified the information that was being transmitted to the Brazilian Portuguese-speaking population accordingly.

Social media platforms are widely used in the general population. They offer dynamic and interactive communication mediated by computers and smartphones. However, not all health professionals and educators are fully aware of the relevance of social media to their day-

-to-day activities, its potential applications, its inherent risks, and ways to attenuate those risks⁽¹⁹⁾.

Many people search for information about bruxism on social media platforms which is demonstrated by this study where observed of videos about bruxism demonstrate that popular interest in the topic exists. The number of views (925.116), likes (26.000), interactions with videos through comments (875), interaction rate (99%), and viewing rate (72843.77%) indicate that viewers want to become more knowledgeable about bruxism or identify professionals who can help them.

Traditionally, oral health maintenance is provided through verbal, written, and face-to-face communication. However, the expansion of ways to access information, even if that

information is sometimes questionable, has contributed to a new educational dynamic⁽²⁰⁾. Unfortunately, the information provided on social media platforms may not be reliable⁽²¹⁾.

Although bruxism is of primary interest to dentists, many health professionals, including doctors, physical therapists, psychologists, and health educators, have explored the subject because factors associated with the condition, including lifestyle behaviors, as well as the consequences of bruxism, suggest the need for multidisciplinary follow-up⁽²²⁾. Professionals in unrelated areas have also produced videos relating their personal experiences with bruxism.

Bruxism can be considered a parafunction of multifactorial origin. Behavioral changes stemming from emotions, anxiety, lifestyle, and quality of life can result in the signs and symptoms of bruxism—including headaches, muscle pain, noise during sleep, and tooth sensitivity—in children, adolescents, and adults⁽²³⁻²⁶⁾. These consequences of bruxism suggest the utility of a data search to explore their causes and possible therapies. This study, however, shows only that many videos on bruxism offer a superficial overview of the causes, signs, symptoms, and treatments of the condition but do not provide references for viewers who wish to learn more.

The vast majority of the videos mentioned myorelaxant plaques and botulinum toxin as treatments for bruxism, although other therapies can help treat the consequences of the condition. Similar studies targeting therapies for bruxism with botulinum toxin have been identified^(27, 28). In both studies, the authors found that the available content was of low quality. They speculated that the number of videos produced by bloggers and professional groups such as beauty centers as a result of the increased interest in botulinum toxin for aesthetic reasons might have been related to the absence of high-quality videos.

Although professional counseling is the best option for addressing pathologies, many patients turn to the Internet for fact-finding. The videos about bruxism that we identified were only moderately reliable. Few of the videos provided sources for viewers to explore. They did not always provide impartial information, and they rarely mentioned that treatment was not always successful. Studies of oral health produced similar results, demonstrating the unreliability of the available information⁽¹⁶⁻¹⁸⁾.

Given the absence of treatment details, in-depth information on other therapeutic possibilities, and references to published studies, 35.2% of the videos were considered of poor or moderately poor quality and only 23.9% were considered of good or excellent quality. This suggests that the content available on YouTube™ is compromised by the transmission of outdated information.

CONCLUSION

Audiovisual platforms, including YouTube™, are an opportunity for the general population to obtain

information related to oral health care. However, most videos about bruxism offer general information about its causes, signs, symptoms, and possible treatments. Moreover, few studies have examined the quality of the available videos. Most of the videos on bruxism currently available appear to be only moderately reliable.

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