QUALITY OF INFORMATION PROVIDED ABOUT ORTHODONTIC EMERGENCY ON YOUTUBE: AN INFODEMIC STUDY

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Abstract

Aim: The assessment of the quality of information (QOI) in oral health-related videos on the video-streaming Web site YouTube has been restricted. This study aimed to assess the QOI regarding orthodontic emergency in videos uploaded by dental professionals (DPs) to YouTube. ***Methods****:* YouTube was scientifically searched using 5 domains. The top 50 videos per search term by most viewed videos. The videos were assessed for viewing characteristics, and a 4-point scoring system (0-3) was applied to evaluate QOI in 10 predetermined domains. Descriptive statistical analyses and intra-rater and interrater reliability tests were done. ***Results:*** Strong intrarater and interrater reliability scores were showed good reliability. Fifty videos from the top 50 most-viewed DPs were viewed with a mean value (SD)count of 4708802.9400(14699419.55)." What do in case of an orthodontic emergency" was the most widely discussed domain in the videos. The audio-visual quality analysis showed, only 68% of videos had good visual quality and 76% of videos were having good audio quality. ***Conclusions:*** There are deficiencies in the QOI linked to orthodontic emergency confined within videos streamed by DPs through the YouTube. DPs should be aware of the importance of YouTube as an information resource and ensure that related videos should be valid with evidence-based information.

Key words*: flexible dentures, thermoplastic resins, PEEK, PEKK, PAEK*

Introduction: The Internet has become a source of health information for a majority of users. With access to the internet becomes very easy.[1] Internet and social media with their User-generated content have become the most popular source of health-related information.[2] A great majority of dental patients also use the internet to research dental condition for themselves or their family or friends, Video-streaming sources like YouTube is the third "most visited" Web site in the world and videos help many non-dental professionals and the general public to understand health problems.[3]

Videos can also be viewed through a wide range of devices such as personal computers, tablets, smartphones, and even televisions. They are sourced easily by search terms and viewed. The major drawback of this user-generated content (UGC) is that it is not regulated by peer review or any other form of scrutiny and so, can be a cause of misinformation.[4]

This has become a major area of concern for Medical and dental professionals. Although, they are able to recognize the influence of YouTube as an information source. They are not able to scrutinize the information for patients and

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the general public. There are many studies that have evaluated the quality of available material.[5] The quality of information (QOI) related to many medical conditions and/or treatments is inconsistent in some cases, videos are misleading and potentially dangerous information is being provided.[6]

Many studies have observed the "inclusiveness" and quality of oral health-related videos on YouTube. Some of them have looked into information on various aspects of dental treatment and diseases.[8-10] But, research on the quality assessment research on orthodontic information on YouTube has been limited. Research on the topic of "orthodontic emergency" was found to be limited. It is vital that patients are aware of the source of information and regarding all of the risks and complications related to orthodontic treatment. Orthodontic emergency is one such problem that requires attention as it happens to people undergoing treatment and sudden problems like breakage of appliances, pain and irritations to oral tissues. In most cases it might be difficult to attain an appointment or treatment during such an emergency and patients essentially look for information from sources other than a dental professional (DPS), Orthodontist or other related health professionals and in some cases other sources like the internet.[11]

The most common source such health-related information is the internet. As the internet is not a regulated and poorly scrutinized information source which relies on user generated content it can be a source of misinformation.[12] The aim of the present study, therefore, was to evaluate the QOI regarding orthodontic emergency presented within the videos uploaded to YouTube by DPS.

MATERIAL AND METHODS

An internet-based cross-sectional infodemic study was planned. Evaluation of publicly available data which is not directly collected from patients for research purposes does not require ethical clearance.[13] The methodology was adapted from similar information used to determine the QOI on oral health-related videos uploaded to YouTube. The online video hosting resource YouTube was searched in June 2021 for videos containing information relevant to orthodontic emergencies. The following keywords or search terms were used: "orthodontic emergency", "loose bracket," "poking brace wire," "braces pain," and "broken braces." The keywords were selected by the use of Google Trends software using the search term "orthodontic emergency".

In the present study the inclusion criteria for a video encompassed: (1) English language content, (2) videos identified as "belonging" to a DP or a dental association, (3) primary content related to orthodontic emergency, and (4) satisfactory audio-visual quality. The following were the exclusion criteria: (1) videos lacking visual/ audio content, (2) more than 15 minutes in duration, (3) videos meant for humorous/drama/sharing personal experience, and (4) news stories. Fifty top 50 videos from each of the search terms were stored and saved in a YouTube account. From the individual DP source, each video was separately analysed. Only the top 50 DPS by "view count" were evaluated.

All the selected videos were viewed completely and the data recorded included: (1) clinical source, (2) country of origin, (3) number of views, (4) time elapsed since upload, (5) duration, and (6) total number of "likes" and "dislikes." The audio and visual quality of the videos was

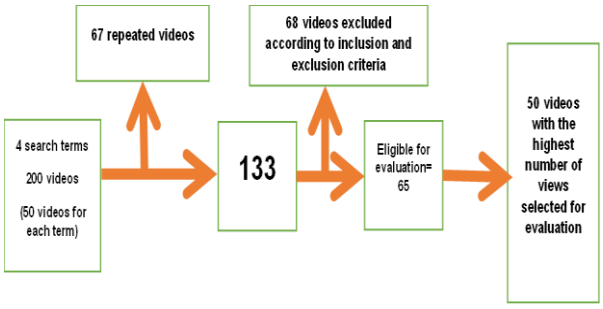
recorded on a scale of "good," "fair," or "poor."[14,15]

Ten orthodontic emergency-related domain questions were identified from publicly available relevant information resources from the American Association of Orthodontists and the British Orthodontic Society.[16,17] The presence, or not, of each domain, was recorded. The QOI contained in each domain present in the video was then assessed using a 4-point score (Table I).

Table 1	QUALITY OF INFORMATION SCORE
Score	Comment
0	The Video contains no and/or misleading information.
1	The video contains inadequate information.
2	The video contains adequate information.
3	The video contains excellent and comprehensive information.

STATISTICAL ANALYSIS

The data were recorded independently by the two investigators in Microsoft Office Excel (Microsoft Corporation, Redmond, Wash) and descriptive statistics calculated from IBM SPSS Statistics for Windows (Version 21; IBM Corp, Armonk, NY). Cohen kappa coefficient was calculated for intra and inter evaluator agreement for the data collected.



RESULTS

The videos were analyzed using the inclusion and exclusion criteria, and the videos of the top 50 search terms looked up (Fig 1). Sixty-five videos had a total of 3,54,40,100 views. The mean number of views of 4708802.9400 (standard deviation [SD], 14699419) per DP. Orthodontists provided most of the videos (87%), and the United States was the source nation for most videos (73%). The audio-visual quality analysis showed, 68% of videos had good visual quality, fair (30%), and only 2% considered poor. The audio quality, 76% was regarded as good, 23% as fair, and 1% was of poor quality. What do in case of an orthodontic emergency (broken brace/ bracket/wire)? Broken Braces was the most widely discussed domain (92%) on Youtube. The causes of these emergencies were the least conversed domain. Cohen kappa intrarater and interrater agreement for the presence of information (0.86 and 0.85) and QOI (0.84 and 0.82) were strong.

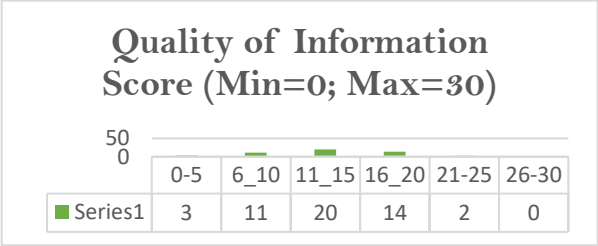


Table 2: Shows the number of the orthodontic emergency related domains reported by the DPs.

Table 2 Orthodontic Emergency Related Domains

DOMAINS	PERCENTAGE (%) OF VIDEOS USING THE DOMAIN
1. What is an orthodontic emergency?	68%
2. What to eat in case you are undergoing an orthodontic treatment?	72%
3. What do in case of an orthodontic emergency (broken brace/ bracket/wire)?	92%
4. What are the major causes of orthodontic emergency?	27%
5. What to do i case of a broken bracket?	68%
6. What do if the bracket/wire is poking your cheek?	58%
7. How to deal with a broken bracket at home?	47%
8. How to use orthodontic wax?	69%
9. When to get an appointment in case of an orthodontic emergency?	54%
10. What to do with irritated lips and cheek?	29%

VARIABLE	Minimum	Maximum	MEAN (SD)	TOTAL (N)
VIEWS	5232.00	8700879.00	4708802.9400(14699419.55)	3,54,40,100
LIKE	5.00	78769.00	5211.6800(14854.26227)	10422
DISLIKE	3.00	756.00	80.3429(18)	4015
DURATION	1.00 minute	15.00 minute	7.5000(12)	375

DISCUSSION

The present study results showed that the QOI related to orthodontic emergency contained within videos created by DPs onto had deficiencies. The study results were similar to previous studies that assessed the quality and/or completeness of material related to orthognathic Surgery, lingual orthodontics and orthodontic retainers.[18-20] Inclusion and exclusion criteria used were similar previous studies investigating the content and quality of dental and orthodontic information on YouTube. Most studies involved all data's uploaded but the present study involved videos uploaded by orthodontic professionals only this was based on the methodology followed by Maurice J. Meade,et al(2020)[20]

A total of 200 videos were initially screened for inclusion (50 videos from 4 search terms). The present study evaluated a total of 50 videos (from 50 DPs), which was somewhat similar to previous studies(range varied 30-104).[19-23] The mean number of views per videos and is greater than the average number views recorded in the qualitative analyses other YouTube videos this may be because of the lesser number of videos available in the domain catogories.[18,20]

The mean duration of each video was under 7.5 minutes this was consistent with other studies.[18-20] But, there is no evidence on the optimal duration for a video that could help in effectively communicating of health information.[24]

Most videos was made from the U.S. this matched findings of similar studies assessing the QOI on You-Tube.[15,16] Evidence suggests that most dental videos uploaded onto YouTube are by the ordinary people.[14,18] They were not considered as YouTube is not "well monitored," the QOI may be insufficient and not always evidence based. Professional dental and orthodontic societies educational institutions, and DPs may, therefore, need to take the lead in the production and posting of high-quality videos. The development of a validated tool to reliably evaluate the QOI contained within uploaded videos is urgently required. Collaboration between the DPs, patients, the general public, and experts in digital technology and epidemiology of information will be necessary to ensure videos contain relevant, high-quality, and evidence-based information. This is of great importance as a lot of health-related information is passed on without any scrutiny by health professionals through social media which is a dangerous trend.

CONCLUSION

Lot of information is available on YouTube on orthodontic emergency. But, the content on these emergencies were found to be lacking. Most videos include information on a variety of emergencies related to orthodontics, but relatively few videos talked about the causes of these. Awareness should be created among the people so that they access only evidence-based information that source should be readily available to them to go through health-based information. Awareness should be also among created DPS so that they are able to produce evidence-based information to the public with good quality.

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