



AN ANALYSIS OF TAMIL YOUTUBE VIDEOS ON DENTAL CARIES

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ABSTRACT The most ubiquitous social media site, YouTube, is frequently utilized to obtain information about oral and dental health. However, there is still an issue with the standard of online health information. We conducted a study to analyse the quality and professionalism of YouTube videos in Tamil language related to dental caries. The objective was to identify the number of useful videos and hoaxes available online. The videos were analysed using Global Quality Scale (GQS) and modified DISCERN questionnaire. In order to provide trustworthy information to the public, the research emphasises the need for dental professionals and healthcare organisations to be aware of the content available online.

KEYWORDS : YouTube, Dental caries, GQS, DISCERN

INTRODUCTION:

Promoting oral health and preventing oral disorders are crucial for enhancing a person's wellbeing. The health and financial expenditures of oral diseases can dramatically lower a person's quality of life.^[1] Comparatively speaking, oral diseases are more prevalent in developing and undeveloped nations that lack modernization and socioeconomic status. Also, people frequently skip dental appointments, which raise the burden of oral diseases. Any untreated oral condition, such as dental caries, gingival bleeding, or malocclusion, can cause constant pain, bad appearance, malfunction, and low focus.^[2] Globally, individual usage of internet resources to research oral health is rising as a result of tech innovation. Obviously the most commonly used social media site, YouTube is simple to use and freely available.^[3] Patients are now utilising these free-to-access sites to receive medical as well as dental information.

Dental professionals play a vital role in providing oral health related information to the patients and if the educational media is in line with current trends in society, more people will adopt healthy lifestyle. Along with existing methods, oral health education is being provided through social media including YouTube videos to reach a wider population. Previous studies have showed that patients seek YouTube videos on various dental diseases and treatment options for tooth alignment, tooth replacement including implants, tooth whitening, oral cancer, tooth impaction, oral hygiene practices and dental injuries. Along with dental professionals, non-dental professionals are also uploading videos on oral healthcare which does not always follow the principles of evidence-based dental practice. The authenticity and reliability of these videos is questionable as they are not subject to any review or standardization before uploading. If the uploaded information is inaccurate and misleading, the patient can be negatively influenced. With increased panic and fear, dentists and healthcare organisations must be cautious of the contents available online so as to provide reliable information to guide the public.^[4] The present study has analysed the YouTube videos related to dental caries in Tamil language for their content quality and professionalism to identify the number of useful videos and hoaxes available online.

MATERIALS AND METHODS:

The present cross-sectional study was conducted by searching the YouTube videos with search terms "dental caries in tamil", "tooth decay in tamil", "black spots in teeth in tamil". The research material was made up of all Tamil-language YouTube videos about dental caries that were posted before December 31, 2022. According to research, the majority of YouTube viewers only watch the first 30 to 60 videos among the searched 60–200 videos.^[5,6] Hence, in our study, the first appearing fifty videos for each term were viewed.

Inclusion criteria: The videos were included if they are uploaded in Tamil language within the last five years, have good audio visual quality and are related to dental caries.

Exclusion criteria: Non-Tamil videos, duplicate videos, audio visual inappropriate with advertisements or music in the background, YouTube shorts, and irrelevant videos related to topics other than dental caries and conferences or lectures targeting a particular group of audience were excluded.

After evaluating 320 videos in the past 5 years, 189 videos were excluded because of language and content inappropriacy. Descriptive characteristics such as title, language, date of upload, the number of views and likes were recorded. Based on the data gathered and the number of views, the videos were categorised, as follows : <1000, 1000–5000, 5001-10000, >10000. Videos quality was assessed through modified DISCERN, and Global Quality Score (GQS).^[7] According to the accurate scientific facts provided on dental caries, the video's overall quality was evaluated. Table 1 shows the criteria used to score the videos based on various aspects of dental caries.

The Modified DISCERN instrument,^[8] a five point assessment tool for evaluating health info, was adopted to assess each video's credibility (scoring: 1 to 5) as follows:

- 1) Are the goals specific and accomplished?
- 2) Are trustable data sources used (e.g., speaker is a dentist)
- 3) Is the information provided fair and objective?
- 4) Are extra resources for the patient's reference enumerated?
- 5) Are there any regions of dispute mentioned?

Finally, a five - point Likert scale GQS^[9] was used to assign a subjective score to the videos' overall quality as follows:

1. Bad quality: The video's poor flow, lack of most information, and complete lack of utility
2. Predominantly poor quality and flow: some information is listed but many crucial subjects are omitted; of very limited use
3. Moderate quality: poor flow; some crucial information is adequately covered, but other information is poorly covered; marginally helpful
4. The majority of the pertinent information is listed, however some areas were not covered; generally high quality and flow;
5. Excellent calibre and fluidity; extremely helpful

Table 1: Scoring criteria for dental caries described in the included videos

CRITERIA	SCORE
DENTAL CARIES:-	
1) What is dental caries	1
2) Structure/description of tooth	1
3) Symptoms	1
4) Prevention	1
5) Complications	1
6) Treatment	1
7) Alternative treatment	1

Statistical analysis:

The data was entered in the Excel spreadsheet and statistical analysis was performed using SPSS version 20.0 software (Statistical Software for Social Sciences, IBM Corporation USA). The categorical data were expressed as frequencies and percentages. Descriptive statistics and Chi-square analysis was used.

RESULTS:

The present study analysed the content quality of YouTube videos uploaded by dental professionals as well as non-professionals. A total of 131 videos were analysed for sources, content, likes, views, duration, upload date and scored according to DISCERN and GQS scale. Based on profession, only 30 % were uploaded by dental professionals and rest of the 70% were uploaded by individual users, homemakers, YouTube enthusiasts, homeopathies/ siddha doctors who fall under this major category of non-dental professionals (Graph 1). No significant difference was found in terms of views between dental and non-dental professionals. Table 2 and 3 shows the number of views and likes for the uploaded videos.

Graph 1: Distribution of YouTube videos based on uploader

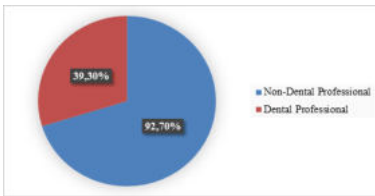


Table 2: Number of views and likes of uploaded videos

Views	Dental Professional n(%)	Non-Dental professional n(%)	p-value
<1000	12(30.8)	30(32.6)	0.964
1000-5000	11(28.2)	22(23.9)	
5001-10000	3(7.7)	8(8.7)	
>10000	13(33.3)	32(34.8)	

Table 3: Mean number of views and likes of uploaded videos

	Views		Likes	
	Dental Professional n(%)	Non-Dental professional n(%)	Dental Professional n(%)	Non-Dental professional n(%)
Mean	11393.2	16869.5	635.09	872.08
Std. Deviation	18546.8	25356.7	2266.15	1909.57
Std. Mean error	1933.64	4060.32	236.263	305.776

The content quality of the videos was analysed based on the topics discussed by the uploaders such as structure of tooth as well as dental caries' definition, symptoms, prevention, complications, treatment and alternative treatment options. Theoretical and evidence based reliable topics like structure of tooth, complication, prevention (oral hygiene instructions), actual dental treatment options (dental fillings, root canal treatment) and alternative treatment options (extraction) were explained only by the dental professionals. The non-dental professionals discussed the meaning of dental caries (27.2%) and treatment options (94.5%) including home remedies and self-treatment options. The content quality analysis showed a significant difference between dental and non-dental professionals (Table 4).

Table 4: Content quality analysis of dental caries related YouTube videos

Question	Dental Professional n(%)	Non-Dental professional n(%)	p-value
Dental caries	29(74.4)	25(27.2)	<0.001*
Structure/description of tooth	27(69.2)	4(4.3)	<0.001*
Symptoms	25(64.1)	18(19.6)	<0.001*
Prevention	28(71.8)	21(22.8)	<0.001*
Complications	18(46.2)	13(14.1)	<0.001*
Treatment	32(82.1)	87(94.6)	0.030*

Alternative treatment	18(42.2)	7(7.6)	<0.001*
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The quality of the uploaded videos were analysed using GQS scale. Vast majority of videos uploaded by non-dental professionals were of poor quality while 7.6% was in the moderate quality. Around 51.3% videos uploaded by professionals were of moderate quality and around 28.2% had good quality and flow. Another notable finding is that only 2 videos (5.1%) uploaded by the dental professionals were of excellent quality and none by the individual users. Table 5 shows the GQS of videos uploaded by dental and non-dental professionals. A significant difference was found between dental and non-dental professionals based on the quality of videos.

TABLE 5: Comparison of videos according to global quality score (GQS)

GQS Score	Dental Professional n(%)	Non-Dental professional n(%)	p-value
1	1(2.6)	44(47.8)	<0.001*
2	5(12.8)	40(43.5)	
3	20(51.3)	7(7.6)	
4	11(28.2)	1(1.1)	
5	2(5.1)	0(0)	

The videos analysed using modified DISCERN scale showed that majority of videos uploaded by non-dental professionals were of bad (47.8%) and poor (43.5%) quality, while most videos uploaded by dental professionals were of moderate (51.3%) quality. The DISCERN score was significantly higher in professional videos with a p value of <0.001. Table 6 shows the comparison of videos according to DISCERN score.

TABLE 6: Comparison of videos according to DISCERN score

DISCERN Score	Dental Professional n(%)	Non-Dental professional n(%)	p-value
1	1(2.6)	77(83.7)	<0.001*
2	10(25.6)	10(10.9)	
3	18(46.2)	5(5.4)	
4	9(23.1)	0(0)	
5	1(2.6)	0(0)	

DISCUSSION:

The most preferred information source, particularly for health information, are online video sharing platforms like Google, Facebook, and YouTube when compared to other social media platforms.(10,11) YouTube is the most recognised video hosting service on social media. In comparison with conventional media, YouTube viewers are able to connect, participate, observe, contribute, and, most importantly, assess their communication system.(12) Users can benefit from YouTube videos as an educational resource, but they shouldn't be their only source of health-related information.

Up to 75% of people base their treatment of medical issues on the outcomes of health information they learn online.(11) Hence in our study, the accuracy, effectiveness, and contents of YouTube videos as a cause of dental caries have been analysed. In this study, individual YouTube users (92.7%) have uploaded the majority of the videos. The results are concerning, particularly given the dearth of data that is supported by research and the input of a layman to YouTube. (13, 14) This is comparable to numerous studies that discovered the majority of videos published on healthcare topics come from amateurs. (15)

Publicly available videos provide a social function by allowing people to share their individual perspectives, although health organizations' videos frequently contain additional instructional material. (16) This is in accordance to our findings, which reveal that the quantity of information and details presented by experts in their videos exceeds those of others. Even if some of the health information available online is of high quality, the issue of low-quality information persists.(17) In our study, poor quality information was more prevalent, which was largely uploaded by quacks. YouTube videos are not subjected to peer review, unlike other social media sites.(18) Also, there are questions about the veracity of the content in YouTube that have been submitted in the domains of dentistry and medicine. Several videos have inadequate information and inaccurate material, which raises the possibility of spreading false information and may have a negative impact on how patients behave towards dental caries.

According to a survey, a non-professional uploader is responsible for the video with the maximum reactions index.(19) On the other hand, the dentist's profile submitted the video with the least interaction index. In contrary, outcomes of our study demonstrate that health professionals receive significantly more views, watching rates, likes, and interaction index for their videos than independent users, even though they have uploaded comparatively less videos. This could be due to the fact that non-dental professionals shared videos of natural products and other items for dental problems, while dental products are shared by professionals. Since natural products can be easily obtained and prepared at home, these DIY products with catchy phrases are more readily acceptable by people and lead to spike in likes and views of the videos.

Furthermore, studies in the literature reveal that amateur uploaders share more videos regarding health issues and, the quantity of source interaction varied among the sources.(20, 21) While some studies have found that low information videos are more popular(22, 23), others have found that intermediate and highly informative videos are more prevalent.(23, 20) The majority of the top-ranking YouTube videos in our study contained little to no information, subsequently certain videos were left out of the analysis. Several of the excluded videos lacked adequate audio-visual quality whilst expert uploaded videos with good content have poor audio-visual quality. This indicates that the utilitarian value of videos does not accurately represent their real content. Health experts' videos that were shared had high DISCERN scores. This shows that their videos were of higher quality and dependability than those of unaffiliated people. However, after assessing with GQS scale, incompleteness was noted since many videos failed to cite the author of the material given and did not offer viewers any resources for finding out more about dental caries. Moreover, according to earlier research, videos submitted by individuals have a higher likelihood of being deceptive than those produced by organisations or specialists.(3,24) Due to YouTube's dynamic data, such as likes, dislikes, and views which continually fluctuate, measurement bias may potentially emerge.(20) Just three keywords were utilised in our study; hence, more investigation is needed to look at additional searches with more keywords. Although other research simply used one term, they nevertheless had positive outcomes. (25)

CONCLUSION:

Though Social Media platforms can be useful in regards with learning health related information, they shouldn't be fully reliable and are not the only source of information. People must become aware of the same and approach dentists in person for consultation and treatment of dental caries. Videos advised by dentists' or any other health care professionals are more trustworthy. All the more, considering the fact that professionals too have to check their videos for content quality and either upload their sources or cite their references. Though some non-dental professional videos were highly popular they had very poor information on dental caries. These results are solely based on information available on YouTube. Hence, further research is required to analyse the content quality of videos on dental caries on various social media platforms.

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