



Youtube as a Source of Information for Maxillary Obturators

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ABSTRACT

Objective: The researchers set out to assess the demographic aspects and usefulness and quality of movies covering maxillary obturator prostheses.

Methods: YouTube TM searches were conducted using two terms associated with obturator prostheses. The first hundred videos returned for each search keyword were evaluated for inclusion based on predetermined criteria. Screening out 64 videos allowed us to focus on the remaining 36 and examine them for commonalities, primary function, information substance, and audiovisual quality. Each video also had an interaction index and viewing rate formula computed.

Results: There were 90,532 views of the last 36 videos. Medical professionals submitted most videos ($n = 21$), whereas just 7% were submitted by patients. The majority of videos had mediocre informational quality, scoring an average of 50% ("moderate"), 30% ("poor"), and 19.4% ("excellent"). Videos were rated on a scale from 0 to 10 for usefulness (mean: 3.92 2.258). Twenty (55.6%) of the videos had low utility, nine (25% had medium utility, and seven (19.4%) had high utility.

Conclusion: The majority of the videos had information content assessed as "slightly moderate," and the results of this study indicated that patients still could not entirely rely on YouTube TM as a dependable source of information about maxillary obturator prostheses.

Keywords: Obturator, YouTube, Usefulness

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INTRODUCTION

The maxilla is an essential facial structure. Supporting the eyes, lower eyelids, cheeks, lips, and nose, the maxilla is a bone that divides the oral and orbital cavities [1,2]. Removing a tumor, an accident, or a congenital condition can all lead to abnormalities in the maxilla. Mastication, deglutition, and communication issues can all worsen due to an oro-nasal and/or oro-antral insufficiency. To recover function and improve one's quality of life after tissue loss, a suitable replacement must be found [3-5].

The maxillary obturator has been the standard application for restoring maxillectomy deformities. This method allows for a clearer view of the maxillectomy cavity and

a faster recovery time, facilitating oncologic surveillance [6]. Hyper nasal speech is possible with obturators, as is the regurgitation of food and liquids into the nasal cavity, difficulty maintaining a clean maxillectomy cavity, and the need for frequent prosthesis adjustments as the size and shape of the palatal defect changes over time, especially in patients undergoing radiation therapy. Obturating more apparent abnormalities, especially in either partially or entirely edentulous patients, can be challenging because the prosthesis may be overly heavy and difficult to handle.

In the healthcare industry, it is everyone's job to inform patients about their conditions and treatment options. However, in the recent decade, the public's usage of the Internet to seek medical information has dramatically increased due to greater Internet accessibility and patients' demand for more information about their ailment [7]. The Internet has rapidly become a go-to resource for health information among both patients and medical professionals [8]. Many people get their news via video-sharing websites. The most well-known of these is undoubtedly YouTube TM [9]. YouTube is now widely used to disseminate critical health-related

information, and it provides people with a free forum for voicing their opinions and experiences. Patients searching YouTube TM for health care information may come across erroneous and potentially misleading content because videos are not subjected to peer review [10]. YouTube TM content has been the subject of numerous medical investigations, but only a few of these studies have focused on oral health videos [11-13]. Academic research has not looked into the information on YouTube concerning the maxillary obturator. This research examined the characteristics, usefulness of material, popularity, and ratings of maxillary obturator-related videos on YouTube TM.

MATERIALS AND METHODS

Since only publicly available data was used, our institution waived the need for IRB approval for this study. On November 21, 2022, clips from the video-sharing website YouTube TM were combed through to find those that addressed the topic of maxillary obturator prosthesis. The terms "maxillary obturator" and "maxillary obturator prosthesis" were used to narrow the search. Quantitative data, including video length, number of views, date of upload, and number of likes and dislikes, were collected via individual searches for each phrase. The number of days since upload and the ratio of likes to dislikes were determined from this data. The origin of the videos was also classified into one of seven broad categories:

- Healthcare professionals
- Universities/professionals
- Educators
- Regular users
- Television stations
- Patients and Unknown origin.

Videos were considered for inclusion if they were available in English, had primary content about maxillary obturator prosthesis, and were of sufficient audiovisual quality. Videos not in English that lacked audio or visuals, satirical, or based on the drama were disqualified. YouTube's advertisements that appeared before and after the search results were disregarded. Each keyword's view count was used to refine the results further. Most studies that have used YouTube TM as a search engine has utilized between sixty and two hundred videos, and previous research has shown that ninety-five percent of viewers who conduct an online search on YouTube TM will not watch more than the first sixty videos of the output. Thirteen thousand two hundred videos were seen and analyzed, the first 100 matchings each search keyword. The videos' addresses were recorded so they could be accessed later.

Hassona et al. [7] used variables such as the number of likes, dislikes, total views, and upload times to derive formulas for calculating an interaction index and viewing

rate for each video. We got the viewer engagement index with the calculation $[(\text{number of likes minus the number of dislikes} / \text{total number of views}) \times 100\%]$. We could determine the viewing rate with the same formula $[(\text{number of views minus the number of days since upload}) \times 100\%]$.

Video ratings also considered the videos' instructional value. Because there are no tried-and-true methods for doing such an analysis, we adapted a set of criteria from an earlier study and utilized them to rate the quality of the movies we saw. To earn an "excellent" grade, content must be comprehensive, easy to follow, and of great value to patients. Some crucial information is effectively provided, while others could be better discussed, and the content is only slightly valuable to patients if given a moderate rating. A 'bad' film has low-quality content, a shaky production value, and crucial details that patients need to know need to be included.

According to Sorensen et al.'s research, we classified the films based on their audio and video quality [14]. Videos with moderate quality and suboptimal flow were classified as moderate, where some vital information was sufficiently discussed, but others could have been better discussed. In contrast YouTube videos with brilliant quality and flow, containing the most relevant information beneficial for patients, were classified as excellent. Videos of poor quality, where some information was reported but where most of the material was absent, could have been more helpful to patients.

A 'usefulness score' was developed to rank movies as unsuitable, slightly practical, moderately beneficial, or extremely useful for patients seeking accurate information regarding maxillary obturator prosthesis. Ratings were given out of ten (0–10): With a perfect score of 10, you will know that this video provides information about the primary maxillary etiology (trauma, oral neoplasms, congenital malformation, disease), describes the functional problems associated with obturator prostheses (mastication, deglutition, speech), and includes data about obturator prostheses, prosthetic rehabilitation, and patient satisfaction. Table 1 a score of

Table 1: Scoring Item.

Scoring item	Score
Etiology	
Trauma	1
Oral neoplasms	1
Congenital malformation	1
Disease	1
Functional problems	
Mastication	1
Deglutition	1
Speech	1
Information about obturator prosthesis	1
Prosthetic rehabilitation	1
Patient Satisfaction	1
Total score	10

Score 0= not useful; scores 1–3 = slightly useful; scores 4–7 = moderately useful; scores 8–10 = very useful.

0 meant that the film gave no insight into possible causes and treatments for the need for prosthetics. Misleading videos included those that presented material that had not been verified by scientists or that advocated for the adoption of prostheses. The movies were evaluated separately by two seasoned prosthodontists (M.H. and N.A.). Prosthodontists could work out their differences and agree on a single value for the video's substance.

The following approach was used to categorize the content of the videos used in the study [15]

The film was helpful since it provided information about maxillary obturator prostheses that had been verified by scientific research.

The film was misleading because it presented information on maxillary obturator prostheses that needed to be verified by science.

Video uploaded by a patient with a diagnosis or receiving therapy detailed the patient's subjective experience.

The data were analyzed with SPSS (SPSS for Windows version 26.0; SPSS Inc., Chicago, IL, USA). The number of views, likes, dislikes, video length, viewing rate, days since upload, engagement index, and comments were all measured to generate descriptive statistics for the videos. The parameters with non-normal distributions were subjected to non-parametric tests after a Shapiro-Wilk test was conducted to ensure data normality. The properties of each type of video (high quality, standard quality, and low quality) were compared using the Kruskal-Wallis test. Spearman's rho test was used to find significant correlations. The level of significance was determined to be $p < 0.05$.

RESULTS

The first hundred videos returned for each search keyword were evaluated for inclusion based on predetermined criteria. After the initial cut, just 36 of the original 64 videos remained for further examination. There were 90,532 total views for the last 36 videos.

Table 2 displays descriptive statistics on video features. Statistics for comments, likes, dislikes, views, interaction index, days since upload, and viewing rate are shown in Table 2, along with their respective means, standard deviations, minimums, and maximums. More than half of the movies (58.3%, $n = 21$) were submitted by medical professionals. In comparison, 19.4% ($n = 7$)

were uploaded by patients, academic or professional institutions uploaded by 16.7% ($n = 6$), and unknown sources were uploaded by 5.6% ($n = 2$).

The average video interaction index score was 5, 0359% 8, 95402 (range: 0.00 to 42.05%), indicating positive viewer engagement.

The majority of videos had mediocre informational quality, scoring an average of 50% ("moderate"), 30% ("poor"), and 19.4% ("excellent"). The audio was judged to be "fair" (41.7%), "good" (30.6%), or "poor" (30.6%) in the majority of videos. Video quality was ranked 41.7% fair, 36.1% good, and 22.2% poor.

The information from YouTube TM videos on maxillary obturator prostheses needed more consistency. Information on obturator prostheses (66.7%), speaking while using obturator prosthesis (50%) and oral neoplasms (44.4%) were the most often brought up issues. Other topics covered in these movies included: mastication with an obturator prosthesis (33.3%), illnesses (30.6%), congenital deformity (27.8%), injuries (22.2%), and deglutition with obturator prosthesis (41.7%).

Video descriptions of cancer risk factors and obturator prosthesis functioning issues were given a usefulness score out of ten. Table 1 included films received an overall usefulness score between 0 and 10 (mean: 3.92 2.258). Twenty (55.6%) of the videos had low utility, nine (25% had medium utility, and seven (19.4%) had high utility.

Spearman's correlation test was run on the data involving the overall usefulness score, the interaction index, and the watching rate. The total score on usefulness and the interaction index was found to have a strong association using the Spearman method ($p=0.01$). There was no statistically significant relationship between the interaction index and the number of views ($p=0.646$).

The Kruskal-Wallis test results in Table 3 compare video attributes for videos ranging in valuable information content from highly useful to moderately helpful to slightly beneficial.

The Kruskal-Wallis test results are shown in Table 3, which compares video distinguishing factors based on total scores for usefulness. There were statistically significant differences when comparing variables like total views, total video time, days since upload, total

Table 2: Descriptive Statistics.

Video features	Mean	Median	Standard deviation	Minimum	Maximum
Total video duration	7,53,036	4,16,500	94,87,387	0,333	37,480
Total number of comments	7,92	2,00	16,503	0	80
Total number of likes	38,56	13,00	83,066	0	487
Total number of dislikes	0,83	0,00	1,134	0	4
Total number of views	2398,11	1125,00	35,13,394	85	17251
Interaction index	50,359	0,7860	8,95,402	0,00	42,05
Number of days since upload	941,36	883,00	7,66,197	93	3000
Viewing rate	40,39,485	11,91,921	8,98,62,863	13,13	4900,85
Usefulness total score	3.92	3	2.852	1	9

Table 3: Comparison of the video parameters among the videos with usefulness total scores.

	Very useful		Moderately useful		Slightly useful		p*
	Mean	SD	Mean	SD	Mean	SD	
Total number of views	410.29	583.726	5371.44	5582.054	1755.85	1853.051	0.009
Total video duration	20.2557	14.0379	5.4833	2.4221	3.9976	5.1309	0.001
Number of days since upload	521.71	890.194	1165.44	779.408	987.4	696.061	0.046
Total number of likes	36.71	57.639	79.33	155.035	20.85	20.543	0.737
Total number of dislikes	0.29	0.756	1.56	1.13	0.7	1.129	0.032
Total number of comments	9.29	13.708	12.67	25.608	5.3	12.153	0.485
Interaction index	9.0554	6.9295	1.1841	1.1265	5.3623	10.9041	0.023
Viewing rate	214.7	353.40308	854.2689	1545.4947	267.5412	559.9781	1.71

SD standard deviation, * Asymptotic significances are displayed. The significance level is .05.

Table 4: Analysis of video variables based on video sources.

	Healthcare professional (N:21)		University/profes (N)		Patient (N:7)		Source unclear (N:2)		p*
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Total number of views	1977.48	2731.305	873.5	1437.303	5129.57	5720.177	1828.5	2376.586	0.025
Total video duration	7.09871	9.4918	11.79667	15.117188	5.40714	2.371664	6.695	5.09824	0.567
Number of days since upload	820.95	688.325	1122.33	1039.354	967.14	967.14	1572.5	1839.185	0.66
Total number of likes	29.81	37.99	8.5	6.156	98.57	172.437	10.5	14.849	0.082
Total number of dislikes	0.62	0.921	0.67	1.633	1.71	1.113	0.5	0.707	0.042
Total number of comments	5.71	9.237	0.83	1.329	22.43	31.246	1.5	0.707	0.028
Interaction index	7.1253	11.06168	3.5919	4.70359	1.3628	0.8504	5.0359	8.95402	0.739
Viewing rate	344.8405	584.26722	69.8867	55.90683	957.8037	1747.8006	403.9485	898.6286	0.045

SD standard deviation, * Asymptotic significances are displayed. The significance level is .05.

dislikes, and interaction index (p <0.05). There was no statistically significant relationship between the number of likes, the number of comments, and the number of views.

Table 4 displayed the results of the Kruskal-Wallis test, which compared the characteristics characterizing videos in terms of their origin. Total views, dislikes, comments, and views per minute all varied significantly from one another (p < 0.05). The statistical analysis showed that the total video time, number of days since upload, total number of likes, and engagement index were not significantly different.

DISCUSSION

Maxillary abnormalities, including oronasal fistulas, loss of cheek and lip support cosmetic flaws in the midface, and difficulty with functional speaking and swallowing, are possible outcomes of a maxillectomy [16, 17]. Restoring maxillary abnormalities with obturator prosthesis is one option for rehabilitating patients. The patient's deglutition and speech can be enhanced rapidly, restoring his ability to lead an everyday social life. People interested in learning more about health-related topics frequently turn to YouTube, where they may also read about other people's experiences. YouTube videos can be a rich source of information, but it is crucial to evaluate their content to ensure you are getting good data. YouTube's massive audience means it can change many people's minds [18].

YouTube's likes, dislikes, views, shared videos, uploaded videos, and other features can facilitate a wide range of user interactions when used as a platform for health promotion and education [19]. According to the data collected; healthcare providers uploaded 58.3% of the videos on YouTube relating to the maxillary obturator. This is consistent with the findings of previous studies, which found that educational channels uploaded up to 50.9% of videos and healthcare professionals posted up to 60% of videos [20-22].

Most of the movies evaluated herein dealt with maxillary obturator prostheses, obturator-assisted speech, and oral neoplasms. However, these recordings generally have less coverage of patient outcomes, illnesses, congenital disabilities, and injuries. Some videos have important and accurate evidence-based information, but the descriptions could be more thorough. The researched videos on YouTube were ranked from least beneficial to most users. Results showed that videos with a modest level of usefulness received the most likes and comments. It was also found that patient-uploaded videos attracted the most attention. The more straightforward verbiage was speculated to be the cause. Patients may also feel less alone and more supported if they can relate to the trials and tribulations of other patients undergoing rehabilitation. This is consistent with prior research showing that most YouTube viewers prefer low-quality videos over high-quality ones. The average person may not find educational videos interesting, so they hunt for alternatives online, often of lower production value [23].

The clips are not helpful but valuable and highly beneficial. None of the analyzed movies were found to have a perfect score of 10 regarding obturator prosthesis information. Video length and likes were much more significant for moderate/beneficial information videos despite there being fewer of them than slightly informative videos. There were statistically significant differences in the total number of views, total video duration, number of days since upload, the total number of dislikes, and interaction index when comparing video characteristic variables based on usefulness total scores ($p < 0.05$). The statistical study showed that the total number of likes, comments, and views did not significantly differ. The number of likes increased as the usefulness score increased.

Coban et al. found that GQS positively correlated with video length, likes, dislikes, interaction index, and viewing rates in the low-information group [24]. The number of views, likes, comments, and viewing rates were positively correlated with GQS in the medium/high information group. Results from a Spearman examination of the correlation between total score and interaction index confirmed a substantial relationship between the two. ($p=0.01$). This demonstrates that video 24 receives favorable responses from viewers.

Due to YouTube's dynamic nature, the data collected here can only be considered representative of the site's state at the time of the search.

CONCLUSION

The majority of the videos had information content assessed as "slightly moderate," and the results of this study indicated that patients still could not fully rely on YouTube TM as a dependable source of information about maxillary obturator prostheses. There is a need for more studies on the extent to which various social media platforms provide accurate information about obturator prostheses. Due to their rarity and limited communication abilities, patients with maxillary obturators should have their internet-sourced health information questioned for its veracity and consistency.

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