**Information Content of YouTube Videos on Orthognathic Surgery – Helpful?**

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**Abstract**

**Aim:** The aim of this study is to investigate the accuracy of the information provided by YouTube videos regarding orthognathic surgery. **Methods and Materials:** YouTube was searched for four keywords such as orthognathic surgery, orthodontic surgery, jaw surgery, and jaw corrective surgery. While the videos having English language, primary content related to orthognathic surgery, and acceptable audio-visual quality were included in the study, the videos with non-English language, lacking audio or visuals, satirical videos, drama-based videos, and news stories were excluded for the study. YouTube advanced search option “sort by view count” was used. Videos were sorted into top 50 for each search term and overall into top 55 from the four searches. Video assessment was done based on the number of views, likes, dislikes, source, and primary intention. Every video was classified as “excellent,” “moderate,” or “poor” according to information content it provided. A predetermined list of orthognathic surgery-related information domains was also evaluated. **Statistical Analysis Used:** STATA version 8.2 was used. **Results:** The top 55 videos had a combined total of 7,663,296 views. Videos predominantly involved patients describing their personal experience (34.54%) and majority were positively biased (85.45%). While only 27.27% of videos were classified as having excellent general information, 61.81% of videos had moderate information and 10.90% videos provided poor information content. **Conclusions:** Information available on YouTube is of moderate quality, and patients should consult dentists regarding questions related to orthognathic surgery. **Keywords:** Health, information, orthodontist, orthognathic surgery, YouTube

**INTRODUCTION**

Internet is very famous nowadays for satisfying people with various services related to different fields. It is a very versatile facility which can help us in completing many tasks easily and conveniently with few clicks. Approximately 80% of Internet users have used it to search for health information. The Pew Internet and American Life Survey revealed that 34% of Internet users have read someone else’s commentary on experience about health or medical issues online, 24% of the Internet users have consulted online reviews of drugs used in treatment of various diseases, and 18% of internet users have gone online to find others who might have health concern similar to theirs. This is particularly prevalent among people living with chronic and rare conditions. Patients regard the Internet as a valuable source of health information and it has been shown to have an impact upon the patient–health-care provider relationship. Freely available video broadcasting sites like YouTube help in providing valuable information to worldwide viewers daily. The videos on channels like YouTube can be sorted by relevance, upload date, view count, and rating. YouTube is an American video sharing website headquartered in San Bruno, California, USA. The service was created by three former PayPal employees, namely Chad Hurley, Steve Chen, and Jawed Karim, in February 2005. It is the fastest growing website in Internet industry. YouTube statistics reveal that it has nearly five billion views per day with an average user spending 40 min a day on the website.

The research shows that physicians espouse somewhat ambivalent, “moderately positive” views toward the use of the Internet by patients for seeking health information. It has its pros and cons. Complicated issues can be discussed easily, but on the contrary, patients may obtain unregulated information resulting in unnecessary fears about health.

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**How to cite this article:** Grewal J, Marria G, Goel S. Information content of YouTube videos on orthognathic surgery – Helpful? Indian J Dent Sci 2019;11:90-4.
One important sphere of health information is providing orthodontic care where information is available on surgical repositioning of the jaws along with complications and risks. The aim of this investigation was to assess the content and quality of the most viewed videos available on YouTube that relate to the process of orthognathic surgery.

**METHODS AND MATERIALS**

**YouTube™ search strategy**

Video broadcast site YouTube™ (http://www.youtube.com) was searched on January 5, 2018, for videos containing information relevant to orthognathic surgery. The following four keywords were used for search: (1) orthognathic surgery, (2) orthodontic surgery, (3) jaw surgery, and (4) jaw corrective surgery. Inclusion criteria for videos were as follows: (1) English language, (2) primary content related to orthognathic surgery, and (3) acceptable audio-visual quality. Exclusion criteria were as follows: (1) Non-English language, (2) those lacking audio or visuals, (3) satirical videos, (4) drama-based videos, and (5) news stories. Videos found in multiple parts were considered as one, and no limitations were placed on video length.

After the removal of duplications, the top 55 videos were saved in a YouTube account using advanced search option “sort by view count” which met the inclusion criteria. These videos were later assessed.

The top 55 videos, included in the first three pages, were chosen because it has been established by Desai *et al.*[13] that 95% of people conducting an online search will look no further than the first three pages of output.

**Video assessment**

After viewing, the following parameters of the videos were taken into account: (1) number of views, (2) duration (seconds), and (3) total number of “likes” and “dislikes.” Videos were then categorized according to their source into six basic groups: (1) orthodontist, (2) patient, (3) surgeon, (4) commercial, (5) academic institute, and (6) source unclear. Along with this, the segregation based on primary intention included (1) technical description, (2) indications and benefits, (3) postoperative care and what should patients expect, (4) complications, (5) patient’s “journey” (video compilations of photographs showing a patient pre- and postoperatively), (6) a video of the procedure by a patient, and (7) others.

Rating of the information content of the videos was done using a set of predetermined criteria modified from a previous study by Singh *et al.* in 2012.[14] It was used to grade the quality of videos, as shown in Table 1.

The overall bias or general tone of the video in relation to orthognathic surgery was also subjectively graded as positive, neutral, or negative.

All assessments were carried out by an observer under the supervision of an orthodontist to eliminate observer bias.

**Statistical analysis**

The entire data were collected and tabulated on Microsoft Excel spreadsheet where statistical analysis was performed using computer software (STATA version 8.2, College Station, Texas, USA, 2003). It included descriptive statistics for source of video, its intention, number of views, and a predetermined list of information provided regarding orthognathic surgery [Table 2]. Continuous variables were calculated using mean and range, and categorical variables were calculated using frequencies and percentages. The final score was generated at the end.

**Results**

A total number of views of the top 55 videos assessed were 7,663,296 with a mean of 139332.7 (standard deviation: 140575.5) and a range of 14,513–604,223. After calculation, the mean number of views per day within the sample was 1731.51. The most widely viewed video was derived from a patient source who described his treatment journey using pre- and postsurgical images. The video had a mean duration of 453.33 s (standard deviation: 401.638) and with a range of 40–2123 s. Further evaluation revealed that the mean number of “likes” for each video was 550.85 (standard deviation: 801.17) and the mean number of “dislikes” was 38.92 (standard deviation: 85.46). It was observed that the most liked video received 3613 “likes” and was uploaded by a patient source. The most disliked video received 583 “dislikes” and was again uploaded by a patient source. Figure 1 shows that approximately half of the videos (50.9%) were derived from patients, whereas a very few had an expert source. Furthermore, the percentage number of views according to video source is depicted in Figure 2 with the highest percentage of views for commercials (62.28%) and the lowest for videos from a health professional (2.45%).

The primary intention of the videos was further discussed. The first primary intention of the videos was individuals describing their “journey” or personal experience of orthognathic surgery (34.6%), the next being a description by “others” where

| Quality of video | Explanation |
|-----------------|-------------|
| Excellent       | Excellent quality and flow, most of the relevant information are included very useful for patients |
| Moderate        | Moderate quality and flow, suboptimal flow, some important information are adequately discussed but others poorly discussed, somewhat useful for patients |
| Poor            | Poor quality, poor flow of the video, some information listed but most missing, not at all useful for patients |


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**Table 1: Subjective classification of information content**

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[91] Indian Journal of Dental Sciences ▪ Volume 11 ▪ Issue 2 ▪ April-June 2019
while return to recreational activities, the sixth criteria, was debated in 3.63% of videos. Further, in the list, the possibility of postoperative pain was explored in 5.45% of videos. Another factor, postsurgical swelling, the eighth criteria, was considered in 9.09% of videos. It was concluded that postoperative swelling may persist from 3 to 12 weeks, with a mean duration.

**General information content**

The general information content was categorized as “moderate,” “poor,” and “excellent,” as shown in Table 1. The pie chart in Figure 3 demonstrates that the videos showed the following information content: 10.91% as “poor,” 27.27% as “excellent,” and 61.82% as “moderate.” Videos attracted different number of views based on the information content. Videos containing “poor” information content attracted the fewest views 983,201 (12.83%), while “excellent” information content attracted 2,093,612 views (27.32%) and “moderate” information content the most views 4,586,483 (59.85%).

Videos upon evaluation on the basis of bias revealed positive bias in majority of them (85.45%), neutral bias (neither biased nor unbiased) in some (9.09%), whereas negative bias toward the procedure (5.46%) in very few of them.

**Information related to orthognathic surgery**

The results of investigation of videos for predetermined list of orthognathic surgery [Table 2] are shown in Figure 4. It reveals that 10.91% of the total videos described different types of surgery. Next in the list was pre- and postsurgical orthodontics as the second and third criteria to classify the videos. Presurgical orthodontics and postsurgical orthodontics were described in 7.28% and 5.45% of videos, respectively. Treatment duration which was the fourth criteria was discussed as presurgical orthodontics, postsurgical orthodontics, and hospital stay. The time duration of presurgical orthodontics was discussed in some videos, which was reported as 12–24 months, with a median treatment of duration being 16 months. The time duration of postsurgical orthodontics was discussed in some videos, which ranged from 1 to 24 months with a mean duration of 8.37 months. The time duration of hospital stay was considered in 18.19% videos with a mean hospital stay reported as 1.5 days ranging from 1 to 3 days. The time required until return to work after surgery, the fifth criteria, was mentioned in 9.09%,
of 5.63 weeks. Postoperative paresthesia which was the ninth criteria was explored in 5.45% of videos. Duration of paresthesia being the tenth criteria discussed in 1.82% videos ranged from 4 to 12 weeks with a mean duration of 5.5 weeks. Patient satisfaction with orthognathic treatment which was the eleventh criteria was noted in 23.64% of videos, and among these, 87.5% of patients were satisfied with their treatment and outcome.

**Discussion**

In the study conducted, a wide range of video content was available on YouTube relating to orthognathic surgery. The videos assessed in this study were the ones most regularly assessed by patients which were implied by the high mean views recorded. Majority of the videos originated from the patient sources. Other sources of information included orthodontists, surgeons, and professional bodies. They were underrepresented among the top 55 videos [Figure 1]. This is in concordance with earlier studies by Clerici et al.[7] and Hegarty et al.[8] who also founded that majority of the videos uploaded on health-care topics were from patient sources.

The next parameter evaluated was observation bias. Most videos were biased toward orthognathic surgery which is to be expected given the predominance of patient uploaded videos and high levels of patient satisfaction associated with orthognathic surgery. This result is similar to the one by Flanary et al. [9] Kiyak et al., [10] Cunningham et al., [11] and Hegarty et al. [8] One of the other parameters evaluated was information content. The information content of most videos assessed was moderate in contrast to the earlier studies conducted where it was “poor” and misleading. [7,8,12] It was observed that many of the videos assessed in investigation involved patients describing their personal treatment journey and were not intended to be the prime source of information for the patients.

Complications of the treatment were not discussed widely. For instance, postsurgical paresthesia of the lips was discussed in 7.26% of videos only. When the complication was discussed, it rarely involved possible duration of the same and the likely periods were generally underestimated as in the other studies by Hegarty et al. [8] and Sousa and Teresa Turri [13] On the contrary, some information was more accurately reported, including the potential duration of hospital stay and length of time for the resolution of postoperative swelling. This was in consistent with published data by Hegarty et al., [9] Garg et al., [14] and Van der Vlis et al. [15] The duration of pre- and postsurgical orthodontics was both longer than what the published data would suggest (Luther et al., [16] Parbatani et al., [17] and Cartwright et al. [18]).

Like any other study has limitations, our work is not an exception to this. In the current study, only a small number of orthognathic surgery-related videos were studied on YouTube, that is, top 55 videos which include the first three pages of the website meaning a lot of material was not screened. The videos were assessed only in English. Earlier evidence on search strategy suggests that most viewers do not go beyond the first three pages of YouTube, with the vast majority being in English. [19] In addition, the content on YouTube is not static. It will vary as time passes due to the addition of new videos and removal of others as mentioned by Bar-Ilan and Peritz [20] and Saberi and Abedi. [21] Despite of all these, the mean views recorded for the videos were very high which indicated that the screening undertaken was representative of the videos routinely accessed by patients, making the results meaningful and applicable in wider setting.

An important outcome of this investigation is that the patients should have an access to appropriate and accurate information, allowing them to make informed choices about health care. Majority of the patients use Google which generates a generic list of websites, images, and videos. Hence, information on such websites must be checked and updated by health professionals regularly, thus improving patient–doctor relationship. The recent development of the “www.yourjawsurgery.com” website provides information to the patients, which is regulated. More such projects must be undertaken by the collaborative efforts of government and dentists preferably in local languages of people so that correct information reaches the patients leading to elevation in the number of successful outcomes.

**Conclusions**

The results of the study showed that people access YouTube for information relating to orthognathic surgery, but the information available on YouTube is moderate as majority of the videos which attracted views were of moderate quality. Hence, patients should consult dentists regarding questions relating to oral health.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Sussanah fox. The Social Life of Health Information; 2011. Available from: http://www.pewinternet.org/2011/05/12/ the-social-life-of-health-information-2011/. [Last accessed on 2018 May 20].
2. McMullan M. Patients using the Internet to obtain health information: How this affects the patient–health professional relationship. Patient Education and Counseling 2006;63:24-28.

3. YouTube statistics. California; 2018. Available from: https://www.omnicoreagency.com/youtube-statistics/. [Last accessed on 2018 May 20].

4. van Uden-Kraan CF, Drossaert CH, Taal E, Smit WM, Moens HJ, Siesling S, et al. Health-related internet use by patients with somatic diseases: Frequency of use and characteristics of users. Inform Health Soc Care 2009;34:18-29.

5. Desai T, Shariff A, Dhillon V, Minhas D, Eure M, Kats M, et al. Is content really king? An objective analysis of the public’s response to medical videos on YouTube. PLoS One 2013;8:e82469.

6. Singh AG, Singh S, Singh PP. YouTube for information on rheumatoid arthritis – A wakeup call? J Rheumatol 2012;39:899-903.

7. Clerici CA, Veneroni L, Bisogno G, Trapuzzano A, Ferrari A. Videos on rhabdomyosarcoma on YouTube: An example of the availability of information on pediatric tumors on the web. J Pediatr Hematol Oncol 2012;34:e329-31.

8. Hegarty E, Campbell C, Grammatopoulos E, DiBiase AT, Sherriff M, Cobourne MT, et al. YouTube™ as an information resource for orthognathic surgery. J Orthod 2017;44:90-6.

9. Flanary CM, Barnwell GM Jr., Alexander JM. Patient perceptions of orthognathic surgery: A retrospective study. J Orthod 1985;88:137-45.

10. Kiyak HA, Vitaliano PP, Crinean J. Patients’ expectations as predictors of orthognathic surgery outcomes. Health Psychol 1988;7:251-68.

11. Cunningham SJ, Hunt NP, Feinmann C. Perceptions of outcome following orthognathic surgery. Br J Oral Maxillofac Surg 1996;34:210-3.

12. Murugiah K, Vallakati A, Rajput K, Sood A, Challa NR. YouTube as a source of information on cardiopulmonary resuscitation. Resuscitation 2011;82:332-4.

13. Sousa CS, Teresa Turrini RN. Complications in orthognathic surgery: A comprehensive review. J Oral Maxillofac Surg Med Pathol 2012;24:67-74.

14. Garg M, Casarini L, Coombes DM, Walsh S, Tsarouchi D, Bentley R, et al. Multicentre study of operating time and inpatient stay for orthognathic surgery. Br J Oral Maxillofac Surg 2010;48:360-3.

15. van der Vlis M, Dentino KM, Vervloet B, Padwa BL. Postoperative swelling after orthognathic surgery: A prospective volumetric analysis. J Oral Maxillofac Surg 2014;72:2241-7.

16. Luther F, Morris DO, Karnezi K. Orthodontic treatment following orthognathic surgery: How long does it take and why? A retrospective study. J Oral Maxillofac Surg 2007;65:1969-76.

17. Parbatani R, Williams AC, Iredale AJ, Sandy JR. The process of orthognathic care in an NHS region. Ann R Coll Surg Engl 2010;92:34-9.

18. Cartwright G, Wright NS, Vasuvaide J, Akram S, Suppa C, Matthews NS, et al. Outcome of combined orthodontic-surgical treatment in a United Kingdom university dental institute. J Orthod 2016;43:94-101.

19. Lo AS, Esser MJ, Gordon KE. YouTube: A gauge of public perception and awareness surrounding epilepsy. Epilepsy Behav 2010;17:541-5.

20. Bar-Ilan J, Peritz BC. The lifespan of “informetrics” on the Web: An eight year study (1998–2006). Scientometrics 2009;79:7.

21. Saberi MK, Abedi H. Accessibility and decay of web citations in five open access ISI journals. Internet Res 2012;22:234-47.