

FEATURES OF HIGHLY VIEWED YOUTUBE VIDEOS ON ALL-ON-4 AND SKY FAST & FIXED

Cristina Teodora Preoteasa^{1a*}, Ramona Mihaela Toma^{2bb}, Laura Iosif^{3cb}, Elena Preoteasa^{3db}

¹Department of Scientific Research Methodology and Ergonomics, Faculty of Dental Medicine, Carol Davila" University of Medicine and Pharmacy Bucharest, Bucharest, Romania

²Private practice, Bucharest, Romania

³Department of Prosthodontics, Faculty of Dental Medicine, "Carol Davila" University of Medicine and Pharmacy Bucharest, Bucharest, Romania

^aDMD, PhD, Associate Professor; e-mail: cristina.preoteasa@umfcd.ro; ORCIDiD <https://orcid.org/0000-0003-4732-6721>

^bDMD; e-mail: ramonatoma4@gmail.com;

^cDMD, PhD, Assistant Professor; e-mail: lauraiosif1@yahoo.com; ORCIDiD: <https://orcid.org/0000-0001-8372-4247>

^dDDS, PhD, Professor; e-mail: dr_elena_preoteasa@yahoo.com; ORCIDiD: <https://orcid.org/0000-0002-2764-4135>

ABSTRACT

 [https://doi.org/10.25241/stomaedu.2021.8\(2\).art.5](https://doi.org/10.25241/stomaedu.2021.8(2).art.5)

Introduction The study aimed to assess features of highly viewed YouTube videos on an alternative of implant-supported fixed prosthesis, namely All-on-4 and SKY fast & fixed, compared to those with a considerably lower number of views.

Methodology Eighty YouTube videos were analyzed, 40 that registered the highest numbers of views, and as control 40 with a considerably lower numbers of views. The search was conducted in February 2020. Data were collected on bibliometric indices, general video features and medical information presented.

Results Highly viewed videos had variable features, tended to date at least 4 years back, with a 5-minute duration, in English, either in spoken or written form, with multiple forms of media content, information presented by the dentist, mainly on implant placement and definitive fixed prosthesis, clearly indicating identification data on the dentist's and the dental clinic name. When compared to videos with a considerably lower number of views, the latter are often longer, in other languages than English, have images as multimedia content, the information presented frequently includes theoretical medical aspects, fragments from clinical interventions, information on definitive fixed prosthesis, and frequently mention identification data on the dentist's name and the dental materials used.

Conclusions Highly viewed videos on dental theme as All-on-4 and SKY fast & fixed have features that differentiate them from those with a considerably lower number of views. Knowing this information helps making videos that meet the users' needs and are more likely to reach their purpose, namely the general population education.


KEYWORDS

Patient Education; Dental Implant; Prosthodontic; Media.

1. INTRODUCTION

Nowadays patient-information sources on medical issues are numerous and diverse. In fact, online resources are an important category, they are used considerably more frequently, with an impact that still needs to be better known considering their various content and sometimes doubtful credibility [1,2]. Among the online resources, videos are a particular category that registers an increased use, being a good tool for medical information for both the public and medical professionals [3]. They can be accessed on different platforms, among which YouTube is one of most popular. Previous research

that assessed the information quality of medical aspects presented by online videos suggested that YouTube is not currently an appropriate source of information, considering sometimes it spreads misinformation [4,5]. Analyzing such documents, it can be easily noticed that they are different in many respects. Considering their increased use, it is important to know the features of highly viewed online videos, which allows medical professionals to make not only videos that transmit the correct information, but also ones that are likely to be accessed by many persons, and therefore reach their purpose to educate. The aim of this study is to assess features of highly viewed YouTube videos on an

 **OPEN ACCESS** This is an Open Access article under the CC BY-NC 4.0 license.
Peer-Reviewed Article

Citation: Preoteasa CT, Toma RM, Iosif L, Preoteasa E. Features of highly viewed YouTube videos on All-on-4 and SKY fast & fixed. *Stoma Edu J.* 2021;8(2):120-124

Received: May 08, 2021; **Revised:** June 03, 2021; **Accepted:** June 22, 2021; **Published:** June 24, 2021

***Corresponding author:** Dr. Cristina Teodora Preoteasa, DMD, PhD, Associate Professor, Department of Scientific Research Methodology and Ergonomics, Faculty of Dental Medicine, University of Medicine and Pharmacy "Carol Davila" Bucharest.
 Address: 4-6 Eforiei Street, 50037 Bucharest, Romania

Tel: 0040726275525; e-mail: cristina.preoteasa@umfcd.ro

Copyright: © 2021 the Editorial Council for the Stomatology Edu Journal.

alternative of implant-supported fixed prosthesis, namely All-on-4 and SKY fast & fixed, compared to those with a considerable lower number of views. Comparisons were made regarding the videos general characteristics such as age, length, language used, multimedia content, as well as some aspects related to their medical theme, namely the presenter's training, type of medical information presented, reference to treatment steps, identification data.

2. METHODOLOGY

For this study a search on YouTube in February 2020 was conducted. The search terms used were "All-on-4" and "Fast and fixed". There were 40 videos analyzed that registered the highest numbers of views, and as control 40 videos with a considerable lower numbers of views.

Data were collected on the following aspects:

- bibliometric indices i.e., number of views, likes, dislikes, and comments;
- general features of the video: the date the video was posted; length of the video (registered in seconds); the language used in the video (registered as English, other language, or without spoken or written communication); multimedia content (if they comprised text, images, audio, videos, animation, and also registering the number of modalities used);
- medical aspects: presenter (dentist, dental nurse, dental technician, patient, unclear, no one); type of medical information presented (theoretical aspects, dentist interviews, fragments from clinical interventions, imaging data, other); medical information presented in regard to treatment steps (data collected during patient evaluation, during surgical intervention for implant placement; of interim prosthesis, of the definitive fixed prosthesis, during follow-up); identification data on the dentist, dental clinic, dental implant manufacturer, and dental materials used.

A statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS Statistics) Considering the data distribution, nonparametric tests were used. For the group comparison the Mann Whitney test and chi-square test were used, according to variable type. The p-values < 0.05 were considered to be statistically significant.

3. RESULTS

Eighty videos were analyzed, 40 videos with the highest number of views (between 71332 and 1232391 views), and 40 with a considerably lower number of views (between 964 and 1562 views). Highly viewed videos dated back a median of nearly 4 years, ranging widely, from 4 months to almost 11 years. The median of their duration was nearly 5 minutes, almost double compared to the one observed in the group with lower number of views, the longest video being almost 50 minutes.

The majority of the videos were in English, but while videos without spoken or written language communication registered lower number of views (e.g., a median of 92974 views in the group of high viewed videos), those in English and in other languages registered higher and similar number of views (median of 192542 views for the videos in English, and 192703 views for the videos in other languages). In highly viewed videos various multimedia content was used, as text, audio, video and images in the majority of them. More frequently the dentist presented or explained the information in highly viewed videos, while patients more frequently presented this information in the videos with a considerable lower number of views, but the difference was not statistically significant. In none of the videos the dental assistant or the dental technician presented the information. In most highly viewed videos fragments were included from the clinical interventions, along with presentation of theoretical aspects, with a statistically significant higher frequency than in the videos with a lower number of views. With a low frequency, aspects as treatment cost and insurance coverage, treatment alternatives, maintenance procedures, dentist-patient relationship, types of materials used, history of dental implants were mentioned. In most highly viewed videos information was included on implant placement and definitive fixed prosthesis, while in most of those with a considerable lower number of views aspects were discussed related to follow-up, patient evaluation and implant placement. Identification data were more frequently encountered in highly viewed videos, most frequently being mentioned the dentist name (Table 1).

4. DISCUSSION

Highly viewed videos on dental theme as All-on-4 and SKY fast & fixed have different features, tend to date at least 4 years back, with a duration of about 5 minutes, mainly in English, either in spoken or written form, with multiple forms of media content (text, audio, video, images), with information presented by the dentist, mainly on implant placement and definitive fixed prosthesis, clearly indicating identification data on the dentist's name and the dental clinic name. When compared to videos with a considerable lower number of views, the latter have a greater number of likes, dislikes and comments, have a longer duration, have spoken or written language communication in other languages than English, have more frequently images as multimedia content, the information presented includes more frequently theoretical medical aspects and fragments from clinical interventions, as well as information on the treatment steps more frequently on definitive fixed prosthesis and less frequently on follow-up, mention more frequently identification data regarding the dentist's name and the dental materials used, and less frequently data on the dental clinic.

Table 1. Features of videos analyzed.

Variable	Highly viewed videos	Low viewed videos	P
Likes (median)	332,5	4	<0,001*
Dislikes (median)	39,5	0	<0,001*
Comments (median)	25,5	0	<0,001*
Date (median)	April 3 rd 2016	September 16 th 2016	0,126
Duration (median)	289 seconds	145 seconds	0,006*
Language: English:other:none (no.)	28:8:4	35:0:5	0,007*
Multimedia content			
- text (no.)	34	32	0,246
- images (no.)	25	15	0,012*
- audio (no.)	34	35	0,785
- video (no.)	31	34	0,685
- animation (no.)	15	15	0,858
- media forms (median)	4	3,5	0,142
Speakers			
- dentist (no.)	19	11	0,065
- patient (no.)	13	20	0,012
- unclear (no.)	5	5	>0,999
- nobody (no.)	10	10	>0,999*
Type of medical information presented			
- theoretical aspects (no.)			
- dentist interviews (no.)	18	5	0,001*
- fragments from clinical interventions (no.)	16	9	0,064
- imaging data (no.)	23	14	0,024*
	14	9	0,165
Refer to treatment steps			
- patient evaluation (no.)	19	22	0,658
- implant placement (no.)	20	21	0,991
- interim prosthesis (no.)	11	7	0,230
- definitive fixed prosthesis (no.)	24	14	0,013*
- follow-up (no.)	11	24	0,006*
Identification data			
- dentist name (no.)	29	18	0,005*
- dental clinic name (no.)	21	31	0,037*
- dental implant manufacturer (no.)	14	7	0,054
- dental materials (no.)	9	2	0,018*

The age of the videos may be a factor that has an impact on the document's visibility, but this research similar to others found that most highly viewed videos on a specific medical theme have very different range in this regard, the trend being of about 4 to 5 years [6,7].

The specific particularities of the video most probably have an impact on its viewing. They should not be too long or too short. This study suggests that the duration should be of about 5 minutes. Other studies found that the duration of highly viewed videos on other medical themes is longer, of about 10 minutes [7], or of about 8 minutes [8], or less, of about 3 minutes [9]. Probably the complexity of the medical topic has an impact on the video length. Chen et al. [8] study results found that useful videos are of a larger duration compared to misleading videos.

These studies show that videos in English were most used. Even so, there were videos in other languages with a very high number of views. An explanation may be that individuals frequently search information in their native languages, due to

the fact that they probably understand it more easily. Explanations relatively often include medical terms, which are sometimes difficult to understand in the native language, sometimes even more difficult to understand in other languages, these being among the barriers and difficulties in understanding medical information [10]. Other researchers found similar results, as the one of Dutta et al. [11], that found that videos in Hindi on COVID-19 pandemic had a higher number of views than those in English.

Similar to other research on other medical topics, patients' testimonials and dentist interviews are frequently used to present information [12,13]. This study shows that videos in which the speakers are dentists are more likely to register a higher number of views compared to videos in which the speakers are the patients. This may be explainable considering the information may be considered more valid when is presented by a specialist in the field.

It is important to adequately include medical information that is pertinent to the subject discussed in the video, but also aspects that are important from the patient's perspective [14].

The results of this research indicates that highly viewed videos presented more frequently information on the definitive fixed restoration. Considering the treatment alternatives analyzed, All-on-4 and SKY fast & fixed are indicated for completely edentulous patients, most frequently treated by removable complete denture, definitive fixed restoration is an important factor for decision making from the patient's perspective, thus, most probably the presentation of this information increased the number of views of those videos. Other research on YouTube videos on medical topics, such as Tang et al. [13], suggest that medical content influences the number of views, given the viewer's interest.

The method used for this research is similar to other studies in the scientific literature [6,9]. View count of YouTube videos was the indicator used to rank documents according to their being accessed. This index was presumed to help identify and differentiate videos with a greater or lower impact on forming the consumer's opinion. As others (e.g., likes), it has flaws related to several factors, as it does not indicate that the video was viewed entirely, is influenced by the video age, it is suspected not to be very accurate, as there is usually a small number of videos with a considerable higher number of views. Even so, considering the increasing use of Internet sources of information, bibliometric indicators have to be defined, and many of them for Internet videos are based on view count, as an indication of the video success. Bibliometric indicators for Internet media is an area that needs to be better known. We must clearly state that view count it is not an indicator of content quality, which was also not aimed to be an objective of this research. This study was meant to try to identify some of the characteristics that facilitate creating a success video from the perspective of persons without medical training. This information could be useful for medical practitioners when creating a video for patients' education and information.

4.1. Study limitations

The study limitations are the following: YouTube has 27 filters which determine which videos are shown first. A view is defined as a click on this movie, it does not mean that the whole movie has been viewed. The

age of a movie must have an influence on its views. The older the movie, the higher the number of views, because the probability that an old movie is picked up is higher than the one for a brand-new movie been picked, unless a filter is set for most recent ones. The number of views is not a quality criterion but a result of filter choice, of aggressive marketing by the manufacturer and other non-disclosed parameters in YouTube. The number of likes is low with a frequency of 0,064% being insignificant. The method used did not allow to target the trueness of the information presented. Hence, it is impossible to deduct if the implant treatment is good, bad or problematic. Another study limitation is the fact that a comparison was made to a limited number of videos with a considerably lower number of views, the rest of them probably having various other characteristics. Also, considering the specific topic analyzed i.e., All-on-4 and SKY fast & fixed, most probably videos on other dental and medical topics may present different particularities. In this research users were considered to be private individuals.

5. CONCLUSION

Highly or less highly viewed videos on dental themes as All-on-4 and SKY fast & fixed are meant for the general population and bear no scientific or educational value. In the level of evidence these video's score less than a case-report. The number of views depends on the parameter chosen and is not a measure of quality nor of trueness. Video-information as found on YouTube cannot replace well-executed formal studies published in peer-reviewed dental journals and should not be recommended to clinicians or to patients.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGMENTS

All authors have an equal contribution to this manuscript as the first author.

AUTHOR CONTRIBUTIONS

CP: concept, data analysis, data interpretation, critical review.

RT: concept, data analysis, data interpretation .

LI: concept, data analysis, data interpretation .

REFERENCES

- Sbaffi L, Rowley J. Trust and credibility in web-based health information: a review and agenda for future research. *J Med Internet Res*. 2017 Jun 19;19(6):e218. doi: 10.2196/jmir.7579. PMID: 28630033; PMCID: PMC5495972.
[Full text links CrossRef PubMed Google Scholar Scopus WoS](#)
- Koya KD, Bhatia KR, Hsu JT, Bhatia AC. YouTube and the expanding role of videos in dermatologic surgery education. *Semin Cutan Med Surg*. 2012 Sep;31(3):163-167. doi: 10.1016/j.sder.2012.06.006. PMID: 22929353.
[Full text links CrossRef PubMed Google Scholar Scopus WoS](#)
- Ayranci F, Buyuk SK, Kahveci K. Are YouTube™ videos a reliable source of information about genioplasty? *J Stomatol Oral Maxillofac Surg*. 2021 Feb;122(1):39-42. doi: 10.1016/j.jomas.2020.04.009. Epub 2020 Apr 30. PMID: 32360751.
[Full text links CrossRef PubMed Google Scholar](#)
- Bora K, Das D, Barman B, Borah P. Are internet videos useful sources of information during global public health emergencies?

- A case study of YouTube videos during the 2015-2016 Zika virus pandemic. *Pathog Glob Health*. 2018 Sep;112(6):320-328. doi: 10.1080/20477724.2018.1507784. Epub 2018 Aug 29. PMID: 30156974; PMCID: PMC6381519.
[Full text links CrossRef PubMed Google Scholar](#)
- Ward M, Ward B, Abraham M, et al. The educational quality of neurosurgical resources on YouTube. *World Neurosurg*. 2019 Oct;130:e660-e665. doi: 10.1016/j.wneu.2019.06.184. Epub 2019 Jul 2. PMID: 31276855.
[Full text links CrossRef PubMed Google Scholar Scopus WoS](#)
- Ward B, Ward M, Nichaporuck A, et al. Assessment of YouTube as an informative resource on facial plastic surgery procedures. *JAMA Facial Plast Surg*. 2019 Jan 1;21(1):75-76. doi: 10.1001/jamafacial.2018.0822. PMID: 30128481; PMCID: PMC6440236.
[Full text links CrossRef PubMed Google Scholar Scopus WoS](#)
- Chen HM, Hu ZK, Zheng XL, et al. Effectiveness of YouTube as a source of medical information on heart transplantation. *Interact*

Interact *J Med Res.* 2013 Nov 21;2(2):e28. doi: 10.2196/ijmr.2669. PMID: 24263225; PMCID: PMC3841345.

[Full text links](#) [CrossRef](#) [PubMed](#) [Google Scholar](#)

8. Knight E, Intzandt B, MacDougall A, Saunders TJ. Information seeking in social media: a review of YouTube for sedentary behavior content. *Interact J Med Res.* 2015 Jan 20;4(1):e3. doi: 10.2196/ijmr.3835. PMID: 25604433; PMCID: PMC4319070.

[Full text links](#) [CrossRef](#) [PubMed](#) [Google Scholar](#) [WoS](#)

9. Dutta A, Beriwal N, Van Breugel LM, et al. YouTube as a source of medical and epidemiological information during COVID-19 pandemic: a cross-sectional study of content across six languages around the globe. *Cureus.* 2020 Jun 15;12(6):e8622. doi: 10.7759/cureus.8622. PMID: 32685293; PMCID: PMC7364420.

[Full text links](#) [CrossRef](#) [PubMed](#) [Google Scholar](#) [WoS](#)

10. Pithadia DJ, Reynolds KA, Lee EB, Wu JJ. A cross-sectional study of YouTube videos as a source of patient information about topical psoriasis therapies. *J Dermatolog Treat.* 2020 Jun;31(4):366-369. doi: 10.1080/09546634.2019.1597247. Epub 2019 Apr 16. PMID: 30885022.

[Full text links](#) [CrossRef](#) [PubMed](#) [Google Scholar](#) [Scopus](#) [WoS](#)

11. Tang W, Olscamp K, Choi SK, Friedman DB. Alzheimer's disease in social media: content analysis of YouTube videos.

Interact J Med Res. 2017 Oct 19;6(2):e19. doi: 10.2196/ijmr.8612. PMID: 29051137; PMCID: PMC5668636.

[Full text links](#) [CrossRef](#) [PubMed](#) [Google Scholar](#) [WoS](#)

Cristina Teodora PREOTEASA

DMD, PhD, Associate Professor
 Department of Scientific Research Methodology and Ergonomics
 Faculty of Dental Medicine
 "Carol Davila" University of Medicine and Pharmacy Bucharest
 Bucharest, Romania



CV

Cristina Teodora Preoteasa, DMD, PhD, Associate Professor Department of Scientific Research Methodology and Ergonomics, "Carol Davila" University of Medicine and Pharmacy Bucharest, Bucharest, Romania. She obtained her DMD degree in 2006 from the "Carol Davila" University of Medicine and Pharmacy Bucharest, Bucharest, Romania. She completed two Master programs in "Biocompatible substances, materials and systems" and "Biostatistics". She became MS in Orthodontics and Dento-Facial Orthopedics in 2010. Her PhD thesis, entitled "Clinical and experimental contributions on the interaction of orthodontic appliances with the hard structures of the teeth" was presented in 2013. She is the author/co-author of more than 80 articles in peer-review journals and contributed to 7 books published in Romania and abroad. She participated in several national and international professional conferences. Her main interests include: orthodontics, dental research, dental education, prosthodontics, oral implantology.

Questions

1. Which of the following statements about patient-information sources on medical aspects is incorrect:

- a. Are numerous and diverse;
- b. Are sometimes of doubtful credibility;
- c. Patients use only online resources for medical information;
- d. Online videos are not good tools for medical information.

2. The correct statement regarding medical information videos:

- a. Can be only accessed on YouTube;
- b. Are used only for patients' information;
- c. Are used only for medical professional information;
- d. Sometimes spread misinformation.

3. Which of the following statements about highly viewed YouTube videos on All-on-4 and SKY fast & fixed is correct:

- a. Have an average duration of 5 seconds;
- b. Are always in English;
- c. The presenter is most commonly a patient;
- d. Commonly include information on the definitive fixed prosthesis.

4. Highly viewed YouTube videos on All-on-4 and SKY fast & fixed, compared to videos with a considerable lower number of views:

- a. Have on average a shorter duration;
- b. Have on average the same duration;
- c. Mention more frequently identification data on the dentist's name;
- d. Are always in English.