

# YOUTUBE™ AS A SOURCE OF PARENT EDUCATION FOR FEEDING PLATES IN CLEFT LIP AND PALATE PATIENTS

Sunnypriyatham Tirupathi<sup>1\*</sup>, Bhagyashree Shetty<sup>1</sup>, Rashmi Singh Chauhan<sup>1</sup>

<sup>1</sup>Department of Pediatric Dentistry, Dr.D.Y.Patil Dental College & Hospital, Dr.D.Y.Patil Vidyapeeth, Pimpri, Pune, Maharashtra, India. dr.priyatham@gmail.com

<https://doi.org/10.51847/DqxQz7vYKf>

## ABSTRACT

Electronic media learning has emerged as a new trend as a consequence of rapid technological advancements, the expansion of online media, and the decreasing cost of mobile technology. Cleft lip and palate (CLP) are one of the most prevalent malformations occurring in the head and neck region. Numerous reports have shown an association between orofacial cleft and weight loss, and feeding disability. Hence, the primary treatment approach could be a feeding plate obturator which helps them in feeding and swallowing. Patients search the internet for information on various health-related topics. YouTube™ is one popular website they may consult. To examine the quality of information offered by YouTube™ for parents seeking information on feeding plate obturators for patients with CLP. A systematic search of YouTube™ for videos containing information on feeding plates in CLP was conducted using the keywords 'Feeding plate in CLP patients' and 'obturators for feeding in CLP patients'. The usefulness of selected videos in providing adequate information was evaluated using a 10-point usefulness score. Most videos were uploaded by healthcare professionals (66.6%, n =6). Videos had generally low usefulness scores (mean: 1.88; range: 0.00-4.00). Viewers' interactions with videos were not affected significantly by their usefulness. Youtube™ videos do not provide complete information regarding importance, fabrication, and method of usage. Videos from reliable and authentic sources like various national and international pediatric and preventive dentistry organizations having comprehensive information about feeding plate obturators would be more beneficial.

**Key words:** Children, Cleft palate & lip, Education, Obturator, Parents.

## Introduction

Among congenital malformations in the head and neck region, cleft lip and palate (CLP) are the most prevalent. Clefts are predisposed to complex etiological factors, and their prevalence can be influenced by racial, ethnic, regional, and socioeconomic factors [1]. According to current estimates, orofacial clefts affect about 1 in 700 live births, with 3200 additional cases projected every year as the world's population grows [2].

Orofacial clefts (OFCs) can be unilateral or bilateral, affecting the lip, palate, or both [3, 4]. Children with cleft lip and/or palate, usually tend to struggle with feeding, putting them at high risk of malnutrition [3, 4]. A recent study by Wu et al. in 2020 showed that physical growth indices of newborns with CL/P under one year of age, differ considerably from those of healthy children of comparable age. Also, its clinical relevance is related to the Surgical correction for a CLP, which requires sustained weight gain before surgery. This issue of malnutrition can be resolved by the usage of Feeding obturators since they aid in sucking and facilitate adequate feeding for infants [5].

According to the findings of a 2018 study conducted by Naz *et al.*, most parents in our community do not seek treatment for the patient with cleft lip and palate for their newborns owing to a lack of awareness and understanding about

feeding plates among parents [6]. It is estimated that YouTube, perhaps the most popular video-browsing site, receives more than 2 billion views per day, with a new video posted every minute on average and a user spends at least 15 minutes each day on the site [7]. As stated by Health Information National Trends Survey (HINTS), the usage of the Internet for health information retrieval has increased significantly [8]. According to research, 8 out of 10 Internet users make use of social media to get health information [9]. In today's digital era, most parents tend to use Youtube™ as a potential preliminary source of information, and our study aimed to evaluate the quality of this existing information.

## Materials and Methods

### YouTube™ search

We searched YouTube™ (www.youtube.com) till October 2021 for videos related to obturators in the feeding of cleft lip and palate patients using the default settings; two distinct search terms were used. The first search term was 'obturators in the feeding of cleft lip and palate' and the second term used was 'feeding plate in cleft lip and palate patients'. A growing body of research indicates that 95 percent of people performing an online search on YouTube™ will view no more than the first 60 videos in the results, and the majority of studies using YouTube™ as a search engine has employed 60–200 videos [10]. We watched and assessed the first 60 videos based on the search

term. The Links to the videos were kept for future analysis.

*Selection of videos*

Initial screening of videos was done to eliminate videos concerning videos in languages other than English, commercials, or providing information about obturators used in adults. Videos with no sound or headlines, duplicate videos, and irrelevant videos such as comics and songs were also excluded.

*Analysis of videos*

Two videos were evaluated individually. The title, date of upload, native country, number of views, and length of each video were all retrieved. Universities or professional organizations, healthcare practitioners, television stations or news agencies, health information Web sites, and other individual users were among the upload sources. The interaction index and viewing rate were used to assess

viewers' interactions with videos [11].

$$\text{Interaction index} = \frac{\text{number of likes} - \text{number of dislikes}}{\text{Total number of views}} \times 100 \quad (1)$$

$$\text{Viewing rate} = \frac{\text{number of views}}{\text{Number of days since upload}} \times 100 \quad (2)$$

A 'usefulness score' was designed to classify videos as not useful, slightly useful, moderately useful, and very useful in providing patients with reliable data about need, right care, and use of obturators. The scores ranged from 0 to 10, The score was further classified as not useful if the score was 0, slightly useful if the score was 1-3, moderately useful if the score was 4-7, and very useful if the score was 8 to 10 (**Table 1**). Disagreements among researchers on the categorization or scoring of a specific video were settled by reviewing the literature and discussing the matter until a consensus was obtained.

**Table 1.** Table representing scoring criteria

Sno	Scoring item	Description	Score
1.	Necessity	If planned, when should they be planned (immediately after birth)	1
		Who is the concerned person? Pediatric Dentist	1
		What frequency it should be changed	1
		How should it be used- only during feeding	1
2.	Use of Obturator in infants with Cleft palate.	Position	1
		Usage with the feeding bottle	1
		Stabilization during feeding	1
		Methods to check for damage to the oral mucosa	1
		Cleaning and storage of palatal obturator	1
3.	Care of Obturator	Check-up of obturator	1
		Time of change of obturator	1

Score 0 = Not Very useful; Score 1–3 = Slightly useful; Score 4–7 = Moderately useful; Score 8–10 = Very useful

*Statistical analysis*

The chi-square test was used to evaluate categorical data while the student's t-test was used to assess continuous variables. Pearson's test was used to find correlations. The statistical significance level was set at  $P < 0.05$ .

**Results and Discussion**

*Video demographics*

Out of 60 videos screened 9 videos met the inclusion criteria whereas 51 videos were excluded. 6 of the 9 videos (66.6 %) were posted by healthcare professionals, while the other three were patients' parent testimonials (33.3%). The mean length of YouTube™ videos on obturators in the feeding of cleft lip and palate patients was 10.14 min (range: 2.45-51.23 min; median: 5.59).

*Usefulness and viewers' interaction*

The mean interaction index score was  $0.72 \pm 0.6$  (range from 0.22 to 2.46 %; median 0.440). The mean usefulness score

of videos was  $1.88 \pm 1.3$  (range 0-4). Surprisingly, none of the video demographics, including viewing rate ( $r = 0.12, P > 0.05$ ), interaction index score ( $r = 0.043, P > 0.05$ ), and video duration ( $r = 0.26, P > 0.05$ ), were substantially correlated with video usefulness scores.

**Table 2.** Descriptive analysis of the data

Characteristics	Descriptive analysis				
	N	Mean	Standard deviation	Median	Range
Usefulness score	9	1.88	1.36	2.00	0.00-4.00
Interaction index	9	0.727	0.692	0.440	0.22-2.46
Viewing rate	9	2480	2035	2496	301-6666
Length of time (in min)	9	10.14	15.49	5.59	2.45-51.23

**Table 3.** Tables showing the Correlation between the variable

Pearson's Co-relation test		
Characteristics	R-value	Significance
Usefulness score	0.238	0.48
Interaction index	0.043	0.91
Viewing rate	0.126	0.74
Length of time	0.262	0.49

Cleft lip and palate patients and their parents face many challenges, but nutrition is perhaps the most important. If the tongue cannot form a negative air pressure seal with part or all of the palate, the swallowing process is compromised, resulting in a variety of problems. To address these concerns, the child, parent, and dental surgeon form a team under the Palliative Pedodontics specialty.

The most common feeding issues that children face are choking and vomiting. Suckling inefficiency, lengthy feeding time, and nasal regurgitation. It is caused by both the entry of food or fluid through the cleft and the incapability of the palatal seal to form [12]. The breast, the feeding bottle, and the bottle are the traditional feeding methods. the cup, as well as the spoon [13]. Another common feeding modality is nasogastric tubing, which eliminates the possibility of food/fluid passing through the cleft. However, the risks of perforation, internal injury or hemorrhage, stiffness with use, bacterial colonization, and loss of sucking reflex are all disadvantages of nasogastric tubing [14]. The most commonly used modality for covering the defect while feeding the child is the obturator or nasoalveolar molding. A feeding appliance is a device that helps the infant express milk by creating a seal between the oral and nasal cavities [15].

Media-sharing websites, such as YouTube™, provide a wide range of social media capabilities designed for watching, sharing, and embedding digital media material on the Web. They also provide functionality present on other types of social networking sites, such as profiles, connections, comments, and private messaging. It's simple to use, offers free basic accounts, and can be accessed from both desktop and mobile devices.

In dentistry, Media-sharing websites may be valuable resources for teaching, community development, marketing, and branding. YouTube™ is one of the most widely used video browsing sites. Its content has been evaluated in numerous studies related to a wide range of medical issues. There have been few studies evaluating YouTube™ content related to dental issues, such as oral hygiene, oral habits, root canal treatment, and orthodontic care [16]. To our knowledge, this is the 1<sup>st</sup> study to analyze the quality of the education provided by You Tube™ to cleft lip and palate patients' parents regarding feeding plates.

According to the findings, the mean duration of the

evaluated videos was 10.14 minutes, and the mean interaction index score was 0.72 percent. The average usefulness score of videos was 1.88, indicating that the quality of the videos was slightly helpful based on the criteria. Furthermore, six of the nine videos (66.6%) were posted by healthcare professionals, while the remaining three were patient parent testimonials (33.3%). Intriguingly, the usefulness score of the videos was not correlated with any of the video characteristics, such as the viewing rate interaction index score or video length ( $r = 0.11$ ,  $P > 0.05$ ). We could not find any videos that scored the highest in usefulness (10 - very useful). Furthermore, the video with the highest viewership, a parent's testimonial, had a usefulness score of 2, which indicates that the quality was slightly beneficial to the patient.

According to the quality of the material included, YouTube™ videos on the use of obturators in cleft lip and palate patients are not available, and there are no beneficial films on the watch list. As a result, patients browsing YouTube™ for information regarding the use of obturators in cleft lip and palate patients might have difficulty accessing informative videos thereby determining whether videos are reliable and worth viewing.

The current study, like earlier studies evaluating YouTube™ videos on oral health, was constrained by the continuously changing content of YouTube™, where videos are posted and deleted daily. As a result, the results will be determined by the time of the search. Longitudinal research or a field-based strategy may be more effective in finding relevant YouTube videos.

## Conclusion

Within the scope of the study, the most viewed videos related to obturators in CLP patients do not provide complete information regarding importance, fabrication, and method of usage. Videos from reliable and authentic sources like various national and international pediatric and preventive dentistry organizations having comprehensive information about feeding plate obturators would be more beneficial.

**Acknowledgments:** The authors are grateful to Dr.Lamea Afnan, Assistant Professor, Department of Public Health Dentistry, Dr.D.Y.Patil Dental College and Hospital, Pune, Maharashtra, India for her support in statistical analysis.

**Conflict of interest:** None

**Financial support:** None

**Ethics statement:** Ethical approval was passed through without review by Institutional review board Dr.D.Y.Patil Dental College and Hospital, Pune for conducting this study as it was devoid of any human animal subjects.

## References

1. Paradowska-Stolarz A, Mikulewicz M, Duś-Ilnicka I. Current Concepts and Challenges in the Treatment of Cleft Lip and Palate Patients-A Comprehensive Review. *J Pers Med.* 2022;12(12):2089.
2. Yilmaz HN, Özbilen EÖ, Üstün T. The Prevalence of Cleft Lip and Palate Patients: A Single-Center Experience for 17 Years. *Turk J Orthod.* 2019;32(3):139-44.
3. Sander AK, Grau E, Bartella AK, Kloss-Brandstätter A, Neuhaus M, Zimmerer R, et al. Dental anomalies and their therapeutic implications: retrospective assessment of a frequent finding in patients with cleft lip and palate. *BMC Oral Health.* 2022;22(1):553. doi:10.1186/s12903-022-02606-3
4. Fu Z, Yue J, Xue L, Xu Y, Ding Q, Xiao W. Using whole exome sequencing to identify susceptibility genes associated with nonsyndromic cleft lip with or without cleft palate. *Mol Genet Genomics.* 2023;298(1):107-18. doi:10.1007/s00438-022-01967-2
5. Wu W, Sun J, Liu H, Chen B, Gao Z, Chen Y, et al. Physical Growth Status and Feeding Methods of Chinese Infants With Cleft Lip With or Without Cleft Palate Under 1 Year of Age. *Front Pediatr.* 2020;8:194.
6. Naz F, Mir S, Bali SK, Nazir S. Awareness of feeding plates among the parents of cleft lip and palate children in Kashmiri population – an original research. *Int J Appl Decis Sci.* 2018;4(4):67-9.
7. McLean S, Cook N, Rovira-Wilde A, Patel S, Kanagasingam S. Evaluating YouTube™ as a patient information source for the Risks of Root Canal Treatment. *J Endod.* 2022:S0099-2399(22)00614-8. doi:10.1016/j.joen.2022.09.003
8. He W, Cao L, Liu R, Wu Y, Zhang W. Factors associated with internet use and health information technology use among older people with multi-morbidity in the United States: findings from the National Health Interview Survey 2018. *BMC Geriatr.* 2022;22(1):733. doi:10.1186/s12877-022-03410-y
9. Sumayyia MD, Al-Madaney MM, Almousawi FH. Health information on social media. Perceptions, attitudes, and practices of patients and their companions. *Saudi Med J.* 2019;40(12):1294-8. doi:10.15537/smj.2019
10. Dutta A, Beriwal N, Van Breugel LM, Sachdeva S, Barman B, Saikia H, 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;12(6):e8622. doi:10.7759/cureus.8622
11. Gulve ND, Tripathi PR, Dahivelkar SD, Gulve MN, Gulve RN, Kolhe SJ. Evaluation of YouTube Videos as a Source of Information About Oral Self-examination to Detect Oral Cancer and Precancerous Lesions. *J Int Soc Prev Community Dent.* 2022;12(2):226-34. doi:10.4103/jispcd.JISPCD\_277\_21
12. Devi ES, Sai Sankar AJ, Manoj Kumar MG, Sujatha B. Maiden morsel - feeding in cleft lip and palate infants. *J Int Soc Prev Community Dent.* 2012;2(2):31-7.
13. Tirupathi SP, Ragulakollu R, Reddy V. Single-visit Feeding Obturator Fabrication in Infants with Cleft Lip and Palate: A Case Series and Narrative Review of Literature. *Int J Clin Pediatr Dent.* 2020;13(2):186-91. doi:10.5005/jp-journals-10005-1723
14. Vongbhavit K, Salinero LK, Kalanetra KM, Masarweh C, Yu A, Taft DH, et al. A comparison of bacterial colonization between nasogastric and orogastric enteral feeding tubes in infants in the neonatal intensive care unit. *J Perinatol.* 2022;42(11):1446-52. doi:10.1038/s41372-022-01452-z
15. Patel D, Goyal R, Puri T. Presurgical nasoalveolar moulding – An adjunct to facilitate surgical repair in infants with cleft lip and palate. *Mod Plast Surg.* 2013;03(1):34-42.
16. Grajales FJ, Sheps S, Ho K, Novak-Lauscher H, Eysenbach G. Social media: a review and tutorial of applications in medicine and health care. *J Med Internet Res.* 2014;16(2):e13.