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Social Media - A Paediatric Oral Health Information Resource?

Manisha Agarwal, B. N. Harshitha*, Sapna Konde and Preetha Peethambar

Department of Paediatric and Preventive Dentistry, AECS Maaruti College Of Dental Sciences, 108, Hulimavu Tank Band Road, Off, Bannerghatta Main Rd, near Meenakshi Temple, BTM 6th stage, 1st Phase, Kammanahalli, Bengaluru, Karnataka – 560076, India

**Corresponding author*

Abstract

The growth of social media has become a channel for many organisations to communicate, advertise, market and educate. The endless stream of communication and connection provided by social media is changing the way we think and absorb information. The three most popular social media networks available are Facebook, YouTube, and Instagram; While Facebook being the most popular, influential, and widely preferred platform. These platforms, through mobile technology has the potential to deliver health messages to large population groups. Although many researches have presented that they have a significant impact on both general and oral health. On evaluation of oral health related educational videos uploaded on these platforms, the present study showed that many of these videos are only moderately informative, as important facts were not adequately addressed. It has also been found that majority of the uploaders were bloggers or educators for children and not trained oral health professionals, rendering the information lacking or inadequate. Therefore, it can be recommended that a regulatory body would be necessary to examine the ethical, moral and human consequence and simultaneously ensure that accurate health related information is posted on social media, after its approval. Additionally, dentists or oral health professionals should be urged to take a more active role in educating patients on various oral health concerns on social media platforms as well.

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Introduction

Gone are the days of waiting for headlines in the morning news and reading magazines. We now have access to all the information we desire at the mere click of a button. The majority of individuals gather their news/information online, primarily through social media networks. Instead of traditional media, about 64.5 percent of the population get news alerts from Facebook, Twitter, YouTube, Snapchat, and Instagram (fig.1). On the internet, there are about 4 billion web pages with healthcare information (Kenny and Johnson, 2016).

Social Media is like TARDIS. It can provide an individual with great experiences and connections from around the world. It also appeals to the desire to be witnessed and acknowledged, as well as the urge for an instant fix. These web-based tools have transformed into a progressively significant component of our daily lives since the last fifteen years, particularly after the upsurge of the COVID-19 pandemic, which constrained face-to-face interactions of humans. In addition to traditional social connections, these media have aided in the maintenance, improvement, and acceleration of information exchange in various health care sectors.

Gradually, social media has gained worldwide recognition as a legitimate source of information and as a platform that allows users to create and share data, as well as participate in social networking. Web 1.0 had a fairly small number of users who could create blogs, however web 2.0 has a considerably larger user base for blog creation and permits interaction and collaboration among one another at the same time (McCarroll and Curran, 2015). Web 1.0 was primarily concerned with reading, but Web 2.0 was designed to encourage involvement and contribution. This has allowed people from various sectors to share information with one another through social media platforms like Facebook, Instagram, Twitter, and WhatsApp.

People around the globe are increasingly relying on the internet for health information. According to the findings of a National Online Survey conducted in the United States, 59% of adults, search for health information on internet (Health Online, 2013). In the same year, another online survey revealed that 49% of Indians utilized the internet to get health information (News, 2018). Internet searches for oral health-related information may help reduce anxiety, assist in understanding current health conditions or treatments, and identify options for alternative treatments (Haslam *et al.*, 2019).

Therefore, people tend to opt for the internet to obtain a wide range of health information effortlessly. Aside from Google, the most popular social network sites for sharing and receiving health information are YouTube, Instagram, and Facebook.

These platforms have been extensively implemented for health information, and they boast a large community viewership that allows users to watch, upload, and download for free, as well as conveniently interact and comment between the sources of upload and other viewers.

Children have been seen spending a significant amount of time recently watching these videos in the comfort of their homes or neighbourhoods. They are more intrigued to these videos as they are vibrant and enjoyable to watch in the relaxed surroundings. Videos have been utilized as a teaching tool for dental health in many regions, and investigations have shown that they are excellent visual aids (Shah, Naseem *et al.*, 2016). Additionally, prior studies have shown that these tools are highly beneficial when used to educate caregivers, children, and the elderly concerning oral/dental health (Shah, Naseem *et al.*, 2016; McNab and Skapetis, 2019;

Shabiralyani *et al.*, 2015). Product-focused videos tend to be 1 to 3 minutes in length as opposed to educational videos produced by credible organizations, which may be 10 to 15 minutes in length. Video length is relevant, as Dias da Silva *et al.*, discovered in their research of dental education content on YouTube, shorter videos are viewed more frequently and in their whole than longer ones (Dias da Silva *et al.*, 2019).

Using the Internet for oral health and knowledge has a slew of drawbacks, such as disorganisation, intricate medical terminology, and a lack of peer review (Cline and Haynes, 2001). Online platforms have the potential to abuse and spread misinformation, (Kılınç, 2022) as these platforms are often unmonitored, allowing for almost anyone to post or upload information, however inaccurate (Knosel *et al.*, 2011; Dias da Silva, 2019).

As a result, it is critical to evaluate the credibility of the information provided, its utility to the viewing public/patients, and its impact on oral health awareness. Hence, It is imperative that health care professionals play a vital role in the fight against “health misinformation” (US, 2021).

With this background we conducted a study that assessed the quality of the video content related to oral health education on Social media platform and the overall usefulness of information available and it was correlated with number of views, duration and also the type of video.

Materials and Methods

This study was designed as an observational retrospective study based on the content of videos available on three social media platforms - facebook, instagram, youtube. These social media platform provides access to videos shared by the users and are easily accessible from a mobile application as well.

The ethical Committee approval was not sought, as the data analysed for this study was publicly accessible. The videos were extracted using the hashtag keywords - “#childrensoralhealthcare” and “#paediatricoralhealth”.

In similar studies done previously, researchers have analyzed the first 60–200 videos, because they have observed that the majority of users exploring any topic on YouTube watched only the first 60 videos (Desai *et al.*, 2013). Hence, the first 60 videos were evaluated based on the inclusion/exclusion criteria.

Inclusion criteria

Inclusion criteria for videos will be (Meng *et al.*, 2019)

1. Focused on human health
2. English language;
3. Related to oral hygiene instructions;
4. Contained an educational or preventive message on oral diseases and
5. Available on/before August 21, 2022.

Exclusion criteria

Exclusion criteria for videos will be (Meng *et al.*, 2019)

1. Irrelevant information;
2. Duplicate;
3. Not in English language;
4. Videos with no sound;
5. Advertisements; and
6. Songs.

The selected videos were further evaluated using The Global Quality Scale (GQS) (Steeb *et al.*, 2022) to assess the overall quality. As shown in Table 1, GQS was a five-point Likert scale based on the quality of information, the flow and ease of use of the information present online. Each video was scored by two independent viewers who are knowledgeable in the risk factors, epidemiology, etiology, symptoms, diagnosis, treatment and prevention of oral diseases.

Results and Discussion

As shown in Fig. 3, 252 videos were screened for each of the terms “#childrensoralhealthcare” and “#paediatricoralhealth”. A total of 170 videos were excluded with reasons, whereas 82 unique videos that met the inclusion criteria were included in the study. Among the 252 videos reviewed, only 32.5% (n = 82) oral health education videos are available on the Social Media in English language; out of which 27% (n = 22) had moderate score and contained some useful information on oral health for the patients.

The overall mean GQS score obtained was-3 (Fig. 4), suggesting that the videos available on these platforms are of moderate quality with “somewhat” useful information for the patients and none being of excellent

quality. Three social media platforms (Youtube, Instagram and Facebook) were used to extract and evaluate the videos, among which Youtube had most oral health educational videos that were included in our study followed by Facebook and Instagram.

An overview of the included videos is shown in Table 2. The majority of videos were “explanatory” type (n = 39, 47.6%), with “Animation” type (n = 31, 34.1%) being the second most common category (fig. 5b). The number of views were strongly associated with the type of videos and it was statistically significant that videos under “animation” category were most viewed followed by the “explanatory” type (fig. 5a).

The maximum score awarded was “4”, to a video of 16.5mins duration. However, the maximum view (>1 lakh) was attained by the videos of shorter duration (avg. 4.3mins) (fig. 6) but the mean score of these videos was lesser (GQS - 3). These videos with highest views were uploaded mostly by Kid educators or Bloggers and not by health related professionals. This suggested that the short duration videos which are watched frequently are lacking in the content or usefulness. Hence, there is definitely a need for good content videos within short duration and better animation addressing children to achieve better impact on their oral health awareness.

In India, a recent study by Pragya Pandey *et al.*, (2021) reported that the prevalence of dental caries is 52% among 3–18 years of age and the maximum overall prevalence was 58% in mixed dentition.(Pragya Pandey *et al.*, 2021) This shows that even though there is increase in the use of social media where lot of oral health promotion videos are available, there is still lack of adequate knowledge and care for oral health among the population. It could be attributed to the fact that there is inadequate information available by the videos.

According to Naik *et al.*, (2015), standard oral hygiene instructions consist of brushing teeth with a toothpaste twice daily, along with interdental areas and the tongue. The content of videos analyzed in our study mostly focused on home oral hygiene routine (brushing teeth, using interdental brushes and floss).(Naik *et al.*, 2015) The toothbrush is the most common oral hygiene aid used,(Frazelle and Munro, 2012) however, not disinfecting toothbrushes after use may recontaminate the mouth.

Table.1 Global Quality Scale Criteria Used to Score Videos Containing Information About Oral Health Care

Score	Global Score Discription
1	Poor quality, poor flow of the site, most information missing, not at all useful for patients
2	Generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients
3	Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients
4	Good quality and generally good flow, most of the relevant information is listed, but some topics not covered, useful for patients
5	Excellent quality and excellent flow, very useful for patients

Table.2 Descriptive of the characteristics of study variables

Variable	Category	n	%
Views	< 100 views	13	15.9%
	101 - 1k views	26	31.7%
	1001 - 10k views	18	22.0%
	10001 - 100k views	10	12.2%
	100001 - 10 Lakhs views	8	9.8%
	> 10 Lakhs Views	7	8.5%
GQS Score	Score 1	2	2.4%
	Score 2	13	15.9%
	Score 3	36	43.9%
	Score 4	31	37.8%
Viewers	Children	28	34.1%
	Parents	32	39.0%
	Dentists	4	4.9%
	Children + Parents	14	17.1%
	Children + Dentists	4	4.9%
Type of video	Animation Videos	31	37.8%
	Explanatory Videos	39	47.6%
	Interview Videos	6	7.3%
	PPT Presentations	6	7.3%
Duration (in secs)		Mean	SD
	Mean	519.94	860.26
	Range	08 - 3828	

Table.3

Guidelines	Description
Type of video and language used	<6 years: Animation videos must be made with only few words appropriate to their level of comprehension.
	6-12years : Animation video with a story line on specific topic must be made using simple language.
	>12years : Animation videos with explanation and demonstration can be made. Few simple dental terms can be introduced. For example : Gingivitis, Plaque, Restoration, etc.,
Duration of video	The duration of the video has to be short and should be ≤ 3 mins
Level of content	Accommodate patients' varying levels of comprehending medical information.
Dental issues to be addressed	Creators should think not only about what oral health information to deliver, but also how to meet the interest, information needs, and health- literacy levels of the general population.
Role of dental professionals	Should be encouraged to actively participate in oral health promotion/education on social media as they can provide adequate information to the population.
Assessment tools	Design assessment tools to enable consumers to critically evaluate the videos posted with more authoritative information sources to make effective healthcare

Fig.1 Social media sites as Pathways to News

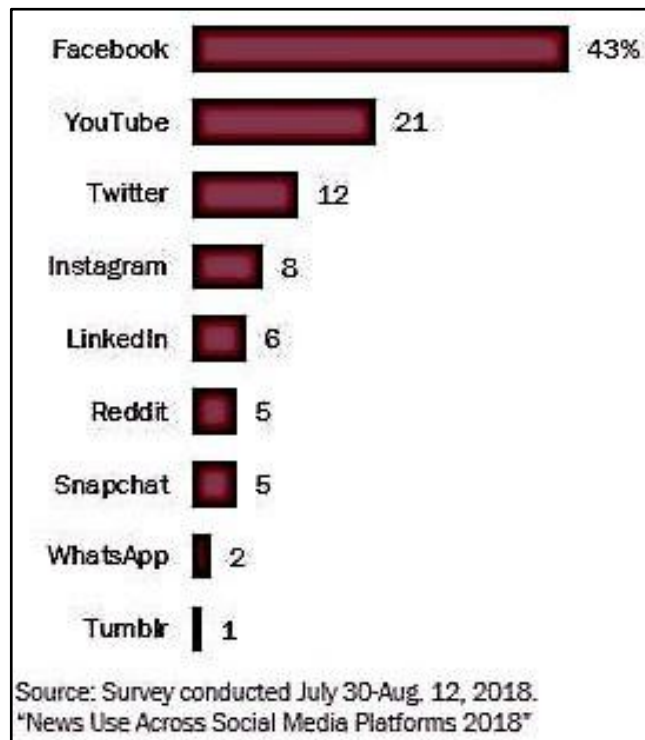


Fig.2

Fig 2. Social Media Use is Increasing

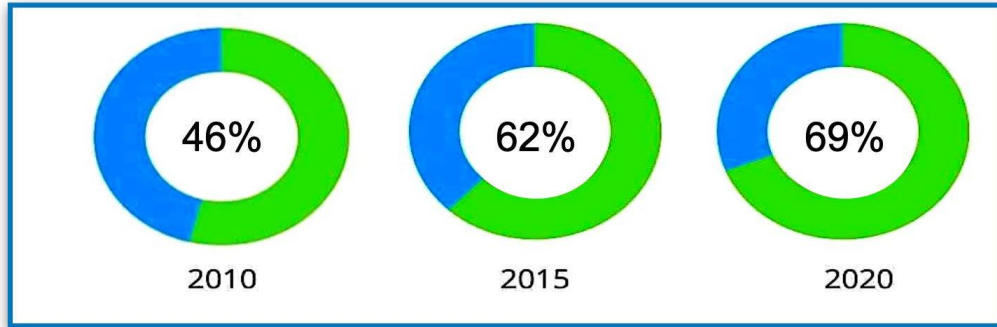


Fig.3

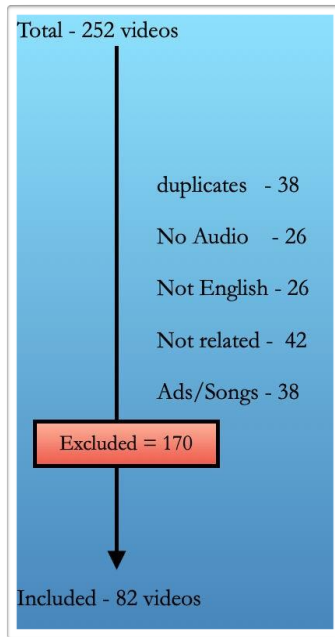


Fig.4

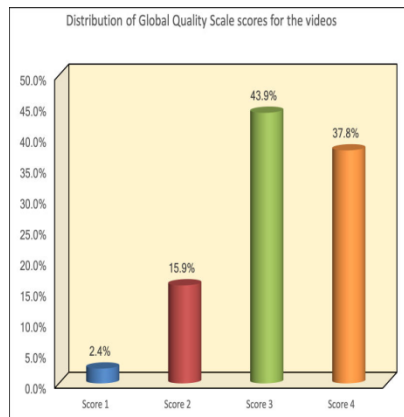


Fig.5a

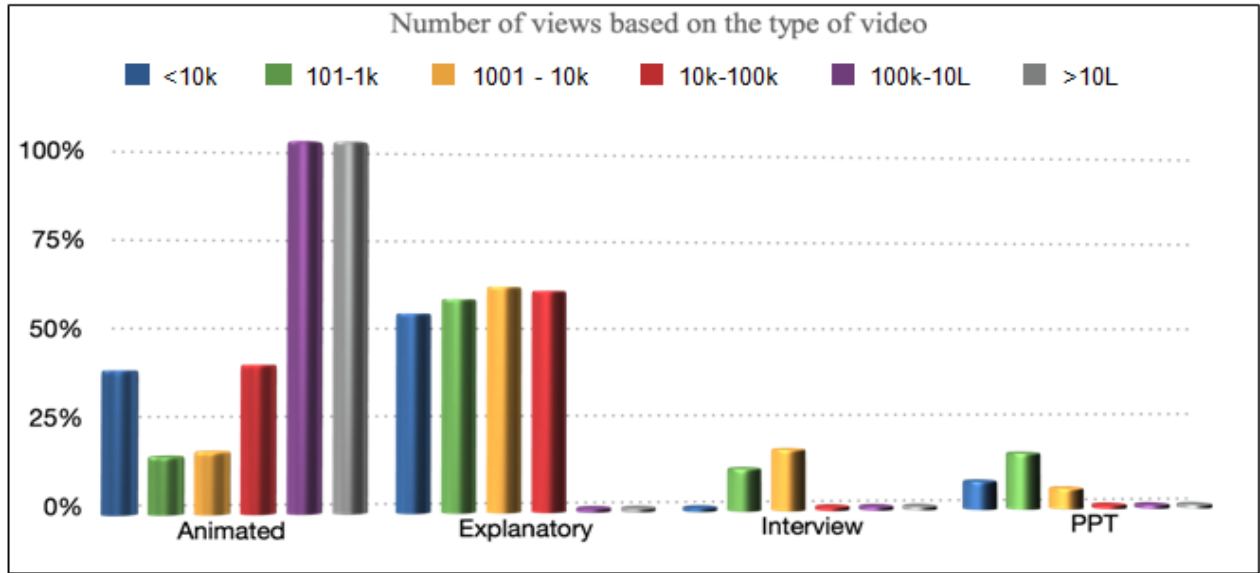


Fig.5b

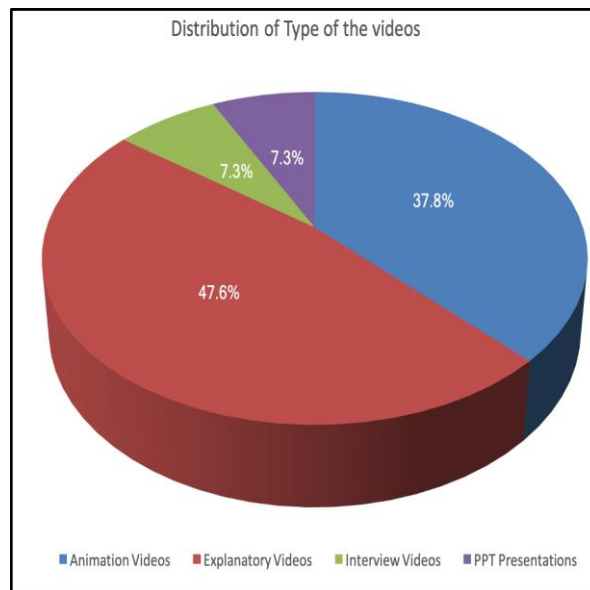
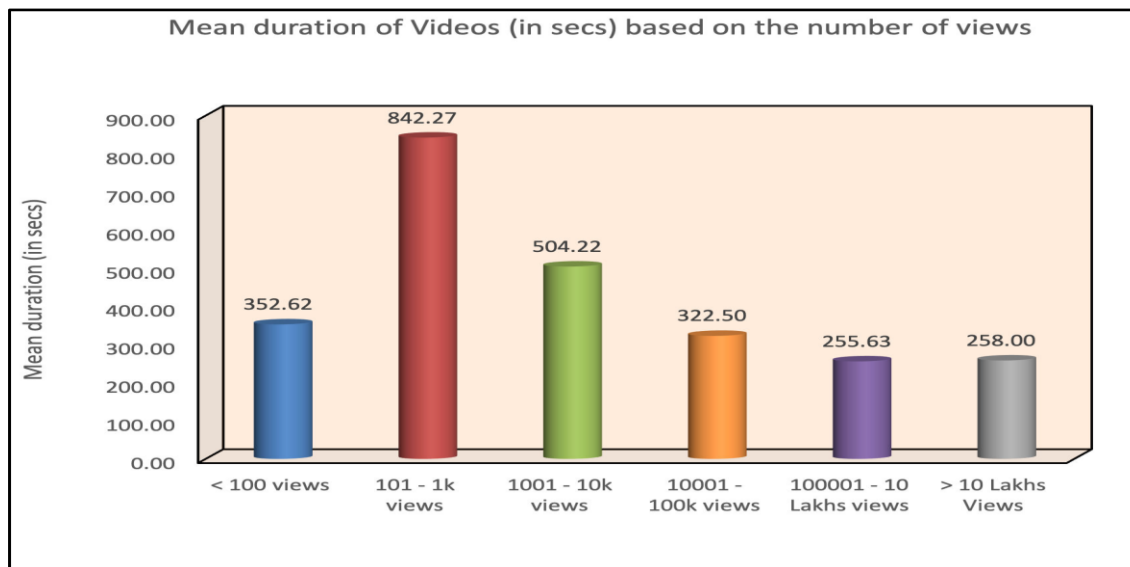


Fig.6



Although, it is advisable to disinfect the toothbrush with an antiseptic mouthwash after each use to reduce the viral load of saliva and the oropharyngeal cavity, it was observed that this information was rarely mentioned. Less than one-third of the videos focused on this topic, and none of the videos incorporated any information regarding oral habits and malocclusion in children, which during later stages of life may lead to undesirable dental and skeletal changes leading to negative impact on their oral health.

Children are relatively informed about the importance of health, dental health, the use of appropriate aids for oral hygiene maintenance, the duration and frequency of brushing teeth. Davidović *et al.*, (2014); Farsi *et al.*, (2004); Vishwanathaiah *et al.*, (2016), in their previous surveys on children's oral health knowledge revealed that, 46.80% children believed that dental caries was caused by mainly by irregular brushing habits, and were unaware about gingival diseases and halitosis. It was also found that approximately 64% of children stated that dental problems were caused solely by eating ice creams; however, additional causative factors such as incorrect brushing methods, not rinsing the mouth, and irregular visits to the dentist were rarely acknowledged by the children. And 48.28% of youngsters stated that avoiding sweets and sticky foods can help prevent dental problems, however other prevention techniques such as correct brushing methods, rinsing oral cavity after meals, and frequent dental visits were less well recognised. Farsi *et al.*, (2004); Vishwanathaiah *et al.*, (2016); Davidović *et al.*, (2014) stated that there is also a lack of

understanding among children about the use of fluoride in caries prevention. (Davidović *et al.*, 2014) These findings suggest that there has been little progress in knowledge of oral/dental diseases other than brushing procedures. Educational videos to boost understanding on frequent dental visits, flossing, and a non-cariogenic diet are crucial.

Corroborating evidences on the usefulness of internet on oral health

Smailhodzic *et al.*, (2016) suggested that people use social media for health-related reasons mainly as a complement to professional healthcare and seeking for social support to fulfil unmet needs by health services.

Prevalence of using social media to gain and exchange oral health information was assessed by Amany M. Al-Thuniyan *et al.*, (2018) in which they found that there was high impact of social media in changing oral health behaviors. In addition, respondents' preferred using social media for getting oral health information for its easiness and accessibility but the communication with the experts was a barrier.

According to Marchetti *et al.*, (2018), by using a mobile oral health Application, adolescents improved their knowledge in oral health and clinical periodontal outcomes.

Scheerman *et al.*, (2020) stated that online contents and social media platforms can potentially improve oral

hygiene and dental outcomes in adolescents. Delivering oral health information *via* social media increased toothbrushing, improving levels of visual plaque and community periodontal indexes.

Guidelines to Improve Video Presentation on Social Media: (Based on the present study)

Based on the findings, it would be beneficial for health care organizations to establish specific Guidelines for individuals and organizations that produce Social Media content, so they can provide engaging and relevant material to patients.

A Regulatory Body can be established to ensure that the right content is uploaded on the internet.

Social media is a promising source of knowledge about oral health care. It contains a wealth of information about dental health. With the pervasiveness of social media, we receive immediate information, but not always with adequate substance. According to the present study, there is a lot of low to moderate-credibility information on these platforms. As a result, there is a need for more instructive videos using simple terms addressing children at their level of comprehension. Videos must be of shorter duration (<5mins) and have good quality animation to have a greater influence on children's oral health knowledge. The videos should not only focus on oral hygiene, but also on other prevalent dental and oral problems. To ensure the above, a Regulatory Body has to be introduced to assess any oral-health related videos before they are made available to the public. Dental health practitioners should also be encouraged to play a more active part in educating patients on various oral health issues via social media platforms.

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