



Review:

Social media and its impact on child's oral health: A review

Dhanraj Kalaivanan, Sumaiyya Saleem, Vishnu Rekha Chamarthi

Department of Pediatric and Preventive Dentistry, Sathyabama Dental College and Hospital
Chennai, Tamilnadu, India

Corresponding Author: Dr. Dhanraj Kalaivanan; Email : ghanrajkalaivanan@gmail.com



Dr. Dhanraj Kalaivanan

Dhanraj Kalaivanan

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Abstract

Oral health has been found to have a profound effect on systemic health. The home environment has a huge influence on children's dental health and care. The family's influence on children's oral health and care is well recognized, and efforts to prevent Early Childhood Caries (ECC) development have focused on parents. Parental education, dental neglect, and difficulty in obtaining health care all serve as hurdles for the general public to adopt suggested child oral health-related behaviors. According to a recent survey, Internet penetration in India has reached about 47 percent in 2021, up from around 4 percent in 2007. The compelling power of internet-based knowledge and social media content has taken precedence over the world. Furthermore, the post-pandemic world and the generation affected directly by the aftermath of COVID have completely relied on social media and their opinions to maintain oral health. Delivering accurate and practical information to parents about their children's dental health is critical, but it can be difficult. These obstacles can be solved by targeting parents via social media networking and Information and Communication Technologies (ICT). This expository narrative focuses on explaining the various facets of social media and their impact on the oral health of children and adolescents.

Keywords: Social Media, Digital Health, Mobile Health, Mhealth

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Introduction

The Oxford dictionary defines social media as “websites and applications that enable users to create and share content or to participate in social networking.” Social media has been constantly emerging since the early 2000s. With the emergence of social media, we have seen a considerable amount of change in all walks of society. From the 4.2 billion users, social media has 3.03 billion active users. ^[1]

In today's world, numerous social networking platforms and social media have been used by medical professional organizations such as the World Health Organization (WHO) to enhance health literacy among individuals. Adopting such approaches by various dental organizations can help to improve people's oral health and oral health literacy. “Oral health literacy” (OHL) has been defined as “the degree to which individuals have the capacity to obtain, process and understand basic oral and craniofacial health information and services needed to make appropriate health decisions”.^[2] Social media is defined as the ‘software that enables individuals and communities to gather, communicate, share and in some cases collaborate or play’.^[2] These include Social Networking Sites (SNS) such as Facebook, and micro-blogging platforms such as Twitter, Snapchat, and Instagram.^[3,4] Information and communication technologies (ICTs) in a broad sense are defined as the digital technologies supporting the capture, processing, storage, and exchange of information. Because of the popularity of these tools, healthcare professionals now need to establish an online presence and engage with their patients through a growing number of channels, forming a new domain known as e-health. The ability to enhance productivity, reduce expenses, and expand patient coverage are just a few of the advantages of ICTs. Furthermore, research has revealed that patients use social media to interact with other patients and build a support network of others living with similar ailments. This has resulted in a paradigm shift in patient contacts that goes beyond the scope of the office visit.^[5] Children's dental health and care are heavily influenced by their familial environment. The family's influence on children's oral health and care is well known, and parents have been the focus of efforts to prevent ECC development. Despite these efforts, dental health is usually stated as a vital but often overlooked part of well-care throughout the first years of life. Survey-based research have

reported on factors such as parental education, dental neglect, and difficulty in obtaining health care that act as barriers to adopting recommended child oral health-related behaviors. Providing accurate and practical information to parents about their children's dental health is critical, but it can be difficult. ^[6, 7] These obstacles can be solved by targeting parents through social media networking and ICTs. Thus, social media can be used to improve the oral health care of children by targeting the families thereby improving the oral health of children. This narrative review elaborates on the aspects of social media and its impact on the oral health of children and adolescents.

Social media and its types

The word “social media” refers to a computer-based technology that allows people to share ideas, opinions, and information via virtual networks and communities. Social media is internet-based and allows users to quickly exchange content such as personal information, documents, movies, and images through smartphones, tablets, or laptops using web-based software or applications. Social media can be utilized for a wide range of technologically-enabled activities. Photosharing, blogging, social gaming, social networks, video sharing, business networks, virtual worlds, reviews, and other activities fall into this category.^[8] Most social media platforms used to enhance oral health rely heavily on photo and video-sharing apps to increase people's literacy. A new division of health care has emerged called “mHealth” or “e-health” which aims at improving health literacy among the public and has been emerging worldwide. mHealth eHealth refers to health-related information that is supported by electronic processes and communication. However, some believe that the phrase is interchangeable with health informatics, with a wide definition including electronic/digital processes in health; others use it in the narrower sense of healthcare practice using the Internet.^[9]

The Global Observatory for eHealth defined mHealth or mobile health as a medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants, and other wireless devices. It includes the use of mobile devices in collecting aggregate and patient-level health data; providing health-care information to practitioners, researchers, and patients; real-time monitoring of patient vitals; and direct provision of care (via telemedicine).^[10]

Social media began as a tool to engage with family and friends, but it has now been used by many businesses to reach out to and promote to their clients. Almost 90% of the population is between the ages of 18 and 29. These consumers are also reported to be more educated and richer. Internet users worldwide spend an average of 145 minutes every day on social media.^[11,12] According to a recent Pew Research Center national poll, more than half of U.S. adults (57%) seek health information on the Internet, and one-fifth use Facebook or other social media to obtain health-related updates.^[13] The mobility, instantaneous access, and direct communication capabilities of mobile technology enable speedier conveyance of health information, which improves medical and public health practices. These traits have the potential to alter the global delivery of health information, enhancing health literacy in developing and developed countries through mobile ICTs and apps known as m-Health.

WhatsApp and oral health

WhatsApp™ is said to have 1.5 billion monthly active users, with over 200 million of them in India. Over 3 million people are now actively using the WhatsApp™ business app. This technology has the potential to be utilized by dental practices and national organizations to communicate with patients about dental treatments and their reasons, treatment costs, and referrals to tertiary care. Educational materials might be easily provided using such systems, and numerous questions or clarifications of information could be swiftly responded to interactively with patients.^[14] Previously, it was reported that general dentists, dental hygienists, patients, and physicians used WhatsApp™ to submit clinical photos and diagnostic queries for telemedicine consultations, thereby decreasing geographic obstacles to initial consultations. Another study conducted among oral diagnostic professionals in India found that WhatsApp was the most commonly utilized application for m-Teledentistry (mobile Teledentistry) practice. Telediagnosis and treatment planning using patient pictures, videos, and radiographs, as well as the accessibility of specialists to rural locations, were emphasized as ways to improve access to oral health care via Whatsapp messaging services.^[14]

Facebook and oral health

Except for China, Facebook (FB) has recently become the most popular social engaging medium on the planet. Facebook is the most popular social

networking site on the Internet, with over 750 million users and 30 billion pieces of material (web links, news stories, blog entries, notes, photo albums) posted each month. Facebook, as a virtual social media platform, provides a simple and low-cost way for both the commercial and nonprofit sectors to share health information, advertise their products and services, and establish brand communities.^[15] Facebook adds more features and applications to make it more user-friendly so that it can be used for medical and dental education. Facebook advertising could be a boon to boosting the general public's oral health literacy. Most campaigns, such as feedback mechanisms, news feeds, or quizzes, can help an organization's promotional and branding efforts by entertaining visitors and enticing them to return to a social media site. National organizations should run such feedback campaigns to better grasp public thinking and guide policymakers.^[15]

Instagram and oral health

Instagram is a social networking website owned by Facebook, Inc. that was launched in October 2010. It appears to appeal to the younger generation, with 90% of its 150 million members under the age of 35.^[16] Instagram® is a free photo and video-sharing program that also functions as a social networking platform. With over one billion users, the average daily visitor spends 5 minutes 42 seconds on the site, and more than 100 million images or videos are uploaded every day.^[17] Instagram supports many types of accounts in all disciplines imaginable, and in dentistry and medicine, many postings are performed by doctors, clinics, and patients with a variety of videos or images covering personal experiences or advice.

Youtube® and oral health

Video-sharing websites are popular information providers. YouTube, the most well-known of these sites, receives over 2 billion views each day, with a new video uploaded every minute on average and an average user spending at least 15 minutes per day on the site. The educational utility of showing movies that teach healthcare processes to both experts and laypeople has been established. People use YouTube to find such demonstration videos and to learn specific treatments like CPR, pelvic floor muscle exercises, and music therapy. Learning from a video portraying a procedure, or video-based self-instruction, has been found to be an efficient way to understand a method. As a result, it is critical that audiovisual content showing such processes is accurate. Because YouTube™ videos are not peer-reviewed, patients searching for health care information

on YouTube™ may come across inaccurate and potentially misleading content.^[17] YouTube channels can be peer reviewed, and appropriate instructional videos should be broadcast by the dental fraternity in order to have a good impact on the public's oral health. Brushing practices and the use of fluoride in caries prevention are two examples that might be used to increase patient oral health literacy around the world. Because children's dental treatment and oral health behaviors are mostly affected by caregivers and parents, such videos may increase treatment-seeking behavior among parents, particularly in developing nations like India.

Twitter and oral health

Twitter® is an online social media platform that allows users to send short messages to groups of people using personal computers or mobile phones. A maximum of 280 words per tweet is permitted, and the relevance of a single tweet can be determined by the number of "retweets" and "likes." Tweeting has been used and addressed in a variety of medical subdomains such as vascular surgery, oncology/cancers, cardiology, psychiatry, breast cancer prevention, and intestinal disorders. Although Twitter utilization in pathology has been reported, its usage in oral health care (OHC) is still in its infancy and has to be documented and fully utilized. Twitter can be utilized in OHC and disease, particularly in the context of early childhood caries and dental trauma awareness, for rapid knowledge distribution, worldwide engagement audience engagement, and real-time coverage of related congresses.^[18]

Every dentist in the world may use social media to spread oral health education via FB, Whatsapp, Instagram, Twitter, Snapchat, and YouTube, resulting in greater oral health literacy. Many educational and social media groups may be formed in the future to provide mental and post-operative care to patients suffering from any dental condition till they recover. Brushing and flossing social media ads will inspire people to adopt healthier lifestyles and attitudes toward dental. Hegarty et al. analyzed the orthognathic surgery videos with the most views on another social media channel, YouTube.^[19] They discovered that 55.83% of the videos delivered poor-quality information, while those with completely informative content made up only 9.17% of the total. Furthermore, they noted that most films were about patients' personal experiences, which carried a significant degree of prejudice. Simsek et al. discovered that the

majority of teeth-whitening videos on YouTube were uploaded by laypeople (60.0%). The concept of teeth whitening was the most often discussed topic (74.0%), followed by the application process (54.0%) and post-op experience (36.0%). Only 12% of videos were classified as having good information quality material, 53% as moderate, and 35% as poor.^[20] Another study on the use of Instagram in orthognathic surgery was conducted by Buyuk et al.^[16] The majority of jaw surgery entries (56.1%) were published by patients who discussed their personal experiences. Most of the posts (39.6%) provided information about orthognathic surgery and concluded that patients should be educated by orthodontists and maxillofacial surgeons about the Instagram platform that it is not an adequate or accurate source of information about orthognathic surgery in its current form.

Influence of social media on pediatric dentistry

In pediatric dentistry, social media could be utilized to increase people's oral health literacy by building successful communication groups with expecting and nursing mothers. Through registered platforms, such educational WhatsApp groups can be established across the country and certified by the National Society to give anticipatory counseling and prenatal counseling for pregnant and breastfeeding moms. Doubts or worries, as well as streamlined instructional messages about feeding habits and after-feeding oral hygiene methods and practices, could be simply communicated via WhatsApp. Follow-up and oral hygiene motivation in children having interceptive orthodontic operations could very well be performed via WhatsApp educational groups.^[21]

Facebook's integration with other social media platforms, such as YouTube, Flickr, and Twitter, makes it an easy and feasible platform not only for the dental community to manage their messages, photos, and audio/video materials, but also for their Facebook visitors or fans to find needed information in various formats.^[22] This might be simply used by dental professional societies and national societies to encourage the distribution of diverse oral hygiene and procedural information to the parental groups across the country. Because of a dynamic and expanding ecology of networks across multiple social media platforms, the usage of social media channels presents an opportunity to facilitate the transparent flow of health information.^[22] By enhancing the speed with which information is communicated, effectively adopting various social media outlets may contribute to increasing consumers' knowledge of health-related products and services

marketed by health organizations. Instagram posts such as simply explaining the procedural effects of each treatment, help parents to easily prepare their children for the dentist visit. Demonstrative videos may readily meet parental and child expectations, and such strategies could quickly improve children's and parents' acceptance of dental care. This could open the way for an intriguing evidence-based study that measures the acceptance of dental care based on media exposure. Theme-based YouTube videos have the potential to improve public oral health literacy in the future. Topics or themes such as newborn oral health, anticipatory guidance, preventive measures, and the relationship between oral and general systemic sickness should be adequately addressed, peer-reviewed, and disseminated via YouTube videos. Such theme-based approaches may be easily embraced by the general people, leading to the adoption of dental

HOME in developing nations such as India. Shirmohammadi et al. conducted a controlled clinical trial that was performed on pre-schooler-mother dyads who were randomly partitioned into two groups, smartphone application intervention or common training groups, which showed that the smartphone application-based oral hygiene practices had significantly lesser plaque accumulation and the values of gingival and plaque indices were towards the healthier scale.^[23] Almoddahi et al. evaluated the Association of dental caries with the use of the Internet and social media among 4414 children between the age group of 12 and 15-year and found that younger adults and children may be using the Internet and social media seeking information on dental caries, but longer online hours may also increase the caries risk. Internet-based health interventions should be supported by preventive strategies to promote effective and positive internet use.^[24] Aboubakr et al conducted a study to evaluate the effect of online Oral Health Education (OHE) programs on the OH knowledge level of school students in Riyadh, Saudi Arabia between February 2021 to May 2021 and concluded that the online health education program increased the Oral Health knowledge of school students. Students in public schools had higher levels of oral health knowledge compared to private school students. Additionally, primary school children had higher knowledge than middle and higher school children.²⁵ However, Sharma et al, conducted a systematic review "Role of Digital Media in Promoting Oral Health" and recommended that

although digital media has the capacity to improve efficiencies and coverage, the technology itself does not guarantee success.^[26]

In a nation like India, where the burden of disease is increasing and there is a general lack of oral awareness and a negative attitude towards dental treatments, the use of social media and the deployment of all-encompassing mobile applications are becoming increasingly important.^[27] As a consequence of this, digitization and oral health are essential components of the future of oral health in a multilingual country like India, where technology may be used to convey information that is important. In spite of the progress that Digital India is making in rural India, a considerable gender gap exists in the digital realm. As a consequence of this, having a solid understanding of digital technology is essential if one wishes to keep oneself informed, engaged, and secure while interacting with the internet. The digital divide between urban and rural areas is significantly more severe than the penetration shows, despite the fact that the urban population is significantly lower than the rural population. To bridge the digital divide, therefore, needs to be the primary focus of future growth plans, which, if implemented well, may make dental health a reality for everyone. A route that has not been travelled before. This change in order does not come as a surprise; the millennial generation was primed and ready for this internet-based education even before the pandemic, and they preferred using social media for getting information about oral health because of its ease and accessibility because communication with the experts was difficult.^[28] This narrative review provides an opportunity to emphasise the fact that it is the right time for all national societies and professional societies to take responsibility for improving the oral health literacy of parents as well as children by utilising such social media tools to reduce the oral health burden on the quality of life among the general public. This is something that should be emphasized because it is the right time for all national societies and professional societies to do so.

Conclusion

Government initiatives in digital healthcare have been widely used to promote general health; however, their use in oral health remains limited, with only a few projects such as mCessation and National Quitline services. According to a review of the research, self-perception of dental status and oral function is an important part of oral health, and mobile applications play an important role in driving evidence-based oral health behavior.

The Authors



Dr.Sumariya Saleem



Prof. Vishnu Rekha Chamarthi

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