Use of the YouTube® Platform by Dental Students: Scoping Review *

Uso de la plataforma YouTube® por los estudiantes de odontología: Revisión de alcance

Uso da plataforma YouTube® por estudantes de odontologia: Scoping review

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Abstract:

Background: YouTube® is a popular platform available to anyone with internet access. It includes educational videos that allow dental students to use them for independent learning, so it is important to find out how they use the platform is used and the reliability of its content. Purpose: To evaluate how the YouTube® platform has been used by dental students for educational purposes. Methods: A scoping review was carried out following the PRISMA-ScR guidelines to explain the research questions: How has the YouTube® platform been used by dental students? How often is it used compared to other social networks? Do the students believe that the videos have scientific evidence? Inclusion criteria are specified as population (dental students), concept (YouTube® use), context (dental education), and types of evidence sources (peer-reviewed publication). Results: 239 studies were identified, of which twelve that were published between 2005 and 2022 were included. Most of them had cross-sectional designs. YouTube® is one of the most used social networks and is mainly used by dental students to watch clinical procedures. There is a lack of confidence in the level of evidence found on the platform. Conclusion: YouTube® is used for educational purposes to facilitate learning in dentistry, especially in clinical procedures. There is skepticism about the reliable evidence that videos on YouTube® contain, thus it is recommended to analyze the quality of the material and that educational institutions increase the development of videos.

Keywords: dental education, dentistry, dental students, Internet, social media, social network, YouTube.

Resumen:

Antecedentes: YouTube® es una plataforma popular y disponible para cualquier persona con acceso a internet. En ella se incluyen videos educativos que permiten a los estudiantes de odontología utilizarlos para el aprendizaje independiente, por lo que resulta importante conocer cómo es manejada esta plataforma y la confiabilidad de lo que contiene. Objetivo: Evaluar cómo los estudiantes de odontología han utilizado la plataforma YouTube® con fines educativos. Métodos: Se realizó una revisión de alcance siguiendo las directrices de PRISMA-ScR para responder las preguntas de investigación: ¿Cómo utilizan los estudiantes de odontología la plataforma YouTube®? ¿Con qué frecuencia es utilizada en comparación con otras redes sociales? ¿Creen los estudiantes que los videos poseen evidencia científica? Los criterios de inclusión se especificaron como población (estudiantes de odontología), concepto (uso de YouTube®), contexto (educación odontológica) y tipos de fuentes de evidencia (publicación revisada por pares). Resultados: Se identificaron 239 estudios de los cuales se incluyeron doce publicados entre 2005 y 2022. La mayoría tenían diseños transversales. YouTube® es una de las redes sociales más utilizadas y los estudiantes de odontología la emplean principalmente para observar procedimientos clínicos. Existe una falta de confianza en cuanto a la evidencia que se encuentra en la plataforma. Conclusión: YouTube® se utiliza en la educación odontológica para facilitar el aprendizaje sobre todo de procedimientos clínicos. Se desconfía del tipo de evidencia que los videos contienen, por lo tanto se recomienda analizar la calidad del material y que las instituciones educativas incrementen la grabación de videos.

Palabras clave: educación en odontología, educación odontológica, estudiantes de odontología, internet, medios de comunicación sociales, odontología, red social, YouTube.

Resumo:

Antecedentes: YouTube® é uma plataforma popular disponível para qualquer pessoa com acesso à Internet. Inclui vídeos educativos que permitem aos estudantes de medicina dentária utilizá-los como forma de aprendizagem autónoma, pelo que é necessário saber como é gerida esta plataforma e a credibilidade do que contém. Objetivo: Avaliar como a plataforma Youtube® tem sido utilizada por estudantes de Odontologia em sua formação. Métodos: Foi realizada uma scoping review com as diretrizes PRISMA-ScR para explicar as questões de pesquisa: Como a plataforma YouTube® tem sido utilizada por estudantes de odontologia? Com que

frequência é usado em comparação com outras redes sociais? Os alunos acreditam que os vídeos possuem comprovação científica? Os critérios de inclusão são especificados como população (estudantes de odontologia), conceito (uso do YouTube®), contexto (educação odontológica) e tipos de fontes de evidências (publicação revisada por pares). Resultados: Foram identificados 239 estudos, dos quais doze publicados entre 2005 e 2022 foram incluídos, a maioria com delineamento transversal. O YouTube® é uma das redes sociais mais utilizadas e é utilizado principalmente por estudantes de odontologia para observação de procedimentos clínicos. Há uma falta de confiança no nível de evidência encontrado na plataforma. Conclusão: O YouTube® é utilizado na educação odontológica para facilitar o aprendizado, principalmente em procedimentos clínicos. Há uma desconfiança no nível de evidência que os vídeos contêm, por isso é recomendável analisar a qualidade do material e que as instituições de ensino aumentem o desenvolvimento dos vídeos.

Palavras-chave: educação odontológica, odontologia, estudantes de odontologia, Internet, mídia social, rede social, YouTube.

INTRODUCTION

Dental education has experienced meaningful changes in recent years. Technology has gained track in education due to its multiple advantages, ease of access, popularity among new generations, and the emergence of opportunities to implement new pedagogical and didactic approaches. Consequently, educators have been prompted to transform their methods to provide instruction (1). In this context, online social networks and educational platforms allow the creation and exchange of virtual contents. Based on demand and supply, various platforms and applications have evolved, and their complexity has decreased over the years (2). On the other hand, engaged and diligent students seek diverse learning sources to ensure the development of competencies for future effective work (3). The new educational platforms have become indispensable tools to improve the learning conditions that traditional education provides to students and increase access to content and the acquisition of knowledge (4). Recently, studies have shown that social networks promote learning since students use them as sources for information, develop positive behaviors, and learn knowledge that is fundamental to provide appropriate care to the population (5).

With technologies, dental education benefits from high hands-on learning and teaching of clinical procedures; however, educators could find it challenging to use new tools for learning. Teaching Individual-focused teaching is complicated when there are high numbers of students in a classroom. Thus, the use of tools such videos increases students thoroughness and understanding of content. A study comparing learning with written clinical cases and video clinical cases found out that the latter meaningfully improved cognitive outcomes by facilitating good discussions and identifying public health problems. In the affective aspect, it was useful at empathizing with patients and learning about inequality in social sectors. In general, learning increased (6). In another study, students emphasized the value of learning through videos to improve communication skills and professional behaviors (7). A systematic review showed that learning from videos was comfortable, novel, easily accessible, and highly functional since it allowed mental preparation of clinical skills before providing care to patients (8). Evidence supports the importance of videos as educational tools.

Educational media showing free access is commonly used by dental students. Since the appearance of the first YouTube® video in 2005 (9), this platform has grown in popularity among dental students (10,11). Likewise, it is widely used to visualize dental clinical procedures (12). Since YouTube® is an open platform, any user can access and/or create content with a potential viewership of millions of people worldwide, which is why dental professors are somehow concerned about whether the content that students watch on this platform and on social networks shows reliable scientific evidence (5,13,14). On the one hand, it is argued that social networks can benefit student learning by permitting its use as an education tool in dentistry. On the other hand, the potential problems and risks in the use of social networks and educational platforms could outweigh learning benefits, hence it should not be used as an educational tool (5). Studies have shown YouTube® as a teaching tool; nevertheless, there are no literature reviews that analyze the evidence and show a panorama of the use of this platform by dental students. Therefore, this study asked the following research

questions: How has the YouTube® platform been used by dental students? How often is YouTube® used when compared to other social networks? What type of scientific evidence does YouTube® provide to students?

Therefore, the research team conducted a scoping review with a twofold aim: evaluating how students use the YouTube® platform to learn, and analyzing the use, frequency, and type of evidence. The key elements of the research questions to conceptualize the focus of the review were dental students (general population or universe); use of YouTube® (concept), and dental education (context). Peer-reviewed publications were used as a source of evidence.

MATERIALS AND METHODS

Protocol and Registration

This review was conducted in accordance with the Guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for scoping reviews (PRISMA-ScR) (15,16) and the Joanna Briggs Institute Reviewer's Manual (17).

Identification of the Research Question

The proposed research questions were: How have dental students used the YouTube® platform? How often do they use it as compared to other social networks? What level/type of scientific evidence does YouTube® provide to students?

Eligibility Criteria

All studies that met the following inclusion criteria were included: (A) peer-reviewed publications; (B) purpose about the use of YouTube by dental students; (C) English, Portuguese, or Spanish language; and (D) being published between 2005 (year the YouTube® platform started) and 2022. Publications with secondary data (i.e., book chapters and reviews) and letters to the editor were excluded. Eligibility criteria are in line with the Joanna Briggs Institute Reviewer's Manual (17) since the inclusion criteria were specified as: population (dental students); concept (use of the platform); context (dental education), and types of evidence sources, (peer-reviewed publications).

Search Strategy and Information Sources

Two trained investigators performed a systematic search on the PubMed, Google Scholar, MEDLINE, SciELO, LiLACS, and BBO databases. The search strategy used the keywords: “dental students,” “dental education,” “social networks,” “YouTube,” and synonyms associated through descriptors and logical operators. Table 1 shows the search strategy used with each database. Final search results were exported and downloaded in ENW, RIS, or NBIB format. The files were then imported into the Endnote X8® program (Endnote, Philadelphia, USA) and duplicates were removed.

TABLE 1
Search Strategy and Keywords Used with Each Database *

Database	Search Strategy and Keywords	Result
PubMed	(Dental Students[MeSH Terms]) OR (Student, Dental[MeSH Terms])) OR (Dental Student[MeSH Terms])) OR (undergraduate[Title/Abstract])) OR (dental student[Title/Abstract])) OR (dental students[Title/Abstract])) OR (pre postgraduate[Title/Abstract])) AND ((((((Education, Dental, Continuing[MeSH Terms]) OR (Education, Dental, Graduate[MeSH Terms])) OR (Education, Dental[MeSH Terms])) OR (dental education[Title/Abstract])) OR (graduate dental education[Title/Abstract])) OR (continuing dental education[Title/Abstract]))) AND ((((((((((Media, Social[MeSH Terms]) OR (Social Medium[MeSH Terms])) OR (Social Media[MeSH Terms])) OR (social media[Title/Abstract])) OR (videos[Title/Abstract])) OR (open access videos[Title/Abstract])) OR (online videos[Title/Abstract])) OR (youtube[Title/Abstract])) OR (YouTube video[Title/Abstract])) OR (YouTube videos[Title/Abstract])) AND (2005:2022[pdat])	100
Google Scholar	"dental students" AND "dental education" AND "social media" AND youtube	109
Medline	dental students AND dental education AND social media AND youtube	7
SciELO	(dental students) AND (dental education) AND (social media) AND (youtube)	6
LiLACS and BBO	(dental student) AND (dental education) AND (social media) AND (db:("LILACS" OR "BBO") AND mj:("Estudantes de Odontologia" OR "Educação em Odontologia" OR "Rede Social" OR "Mídias Sociais" OR "Odontologia") AND la:("es" OR "pt" OR "en")) AND (year_cluster:[2005 TO 2022])	13 4

* SciELO: Scientific Electronic Library Online. LiLACS: Latin American and Caribbean Literature in Health Sciences. BBO: Brazilian Bibliography of Dentistry.

Selection of Sources of Evidence

Based on the inclusion and exclusion criteria, two reviewers independently assessed the titles, abstracts, and full texts of all publications identified in the search. If there was disagreement during study selection and data extraction, it was assessed for a third time and jointly as necessary. The intra- and inter-observer Cohen's Kappa coefficients were performed using 70 % reported in previous studies. The selection of sources was fulfilled until July 30, 2022.

Process of Graphical Representation of Data

Data from each study were registered in tables. The variables analyzed were: authors' name, year of publication, place where research was conducted, purpose/question, study population/sample size (when applicable), methods, type of intervention (when applicable), concept, key results/findings that related to our research questions.

Data Grouping

After data tabulation, a narrative summary was performed. The results were presented and discussed to respond to the research questions.

RESULTS

The intra-examiner Cohen's Kappa coefficient was 0.94 (CI 0.58 - 1.00) and the inter-examiner was 0.80 (CI 0.72 - 0.91). A PRISMA-ScR flowchart of study identification and selection is shown in Figure 1. From the

six databases, 239 studies were identified for selection. When downloading the data to the Endnote® program, nine were excluded due to duplication, 200 studies were excluded after analyzing the research title, and 18 were excluded after reviewing the abstract. At the end, 12 studies were chosen as the sample for the review. Table 2 shows a summary of the included studies.

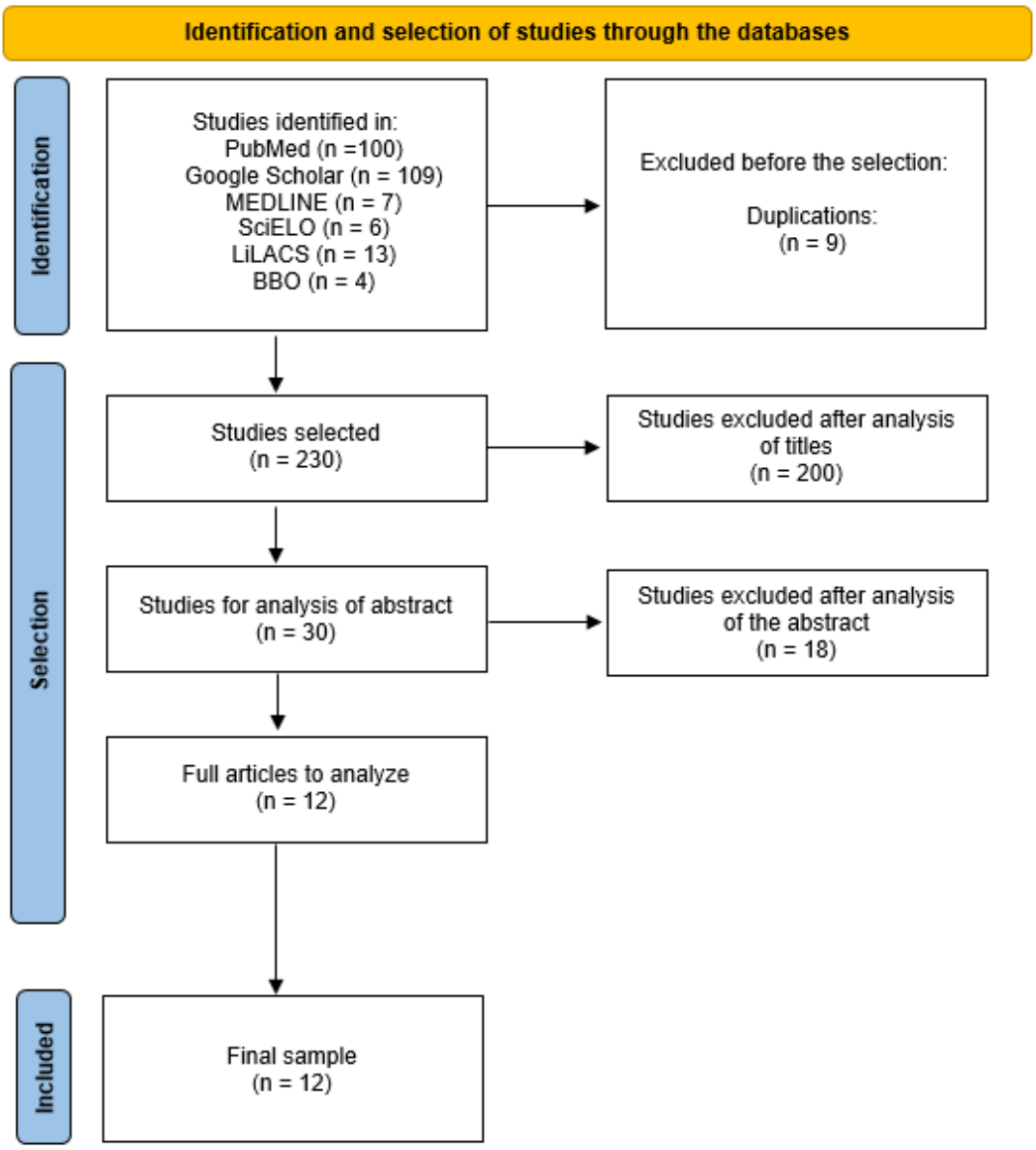

FIGURE 1
PRISMA-ScR Flow Chart with Details of the Data Search and Selection Process (16).

TABLE 2
Summary of Studies Included in the Review

Author, year	Question/purpose	Research design	Methods	Results of interest, Conclusion
Aldallal, *et al.*, 2019 (18)	To assess the use and effectiveness of YouTube® as a learning resource for oral surgery by fourth and final year dental students at a single university.	Cross-sectional descriptive	They conducted a survey through a 16-question online questionnaire to investigate the perceptions of fourth and final year dental students about teaching in the oral surgery course and the use of YouTube® as a learning tool.	122 students responded to the survey. 82.67% used YouTube to study surgical procedures. 33 students argued that the YouTube videos did not match the teaching at the university. 50 students responded that the videos had influenced their practice. In conclusion, teaching methods evolve over time. YouTube® could have a complementary role in oral surgery curricula but should not be used without validated instructional material.
Burns, *et al.*, 2020 (12)	To evaluate the use of YouTube® as a learning tool for clinical procedures among third- and fourth-year dental students	Cross Multi-institutional	A multiple-choice survey was administered to third- and fourth-year dental students at 5 dental schools in the United States. Questions were asked about the use of YouTube® related to: demographic information, general use, as a tool to learn clinical procedures, sharing and validity. Descriptive and quantitative analyzes were performed.	479 students were surveyed. The primary use of YouTube® was for entertainment (74.3%), educational purposes (7.3%), and non-academic tutorials (8.1%). 95% of respondents found videos a useful learning tool, and 89% would like their faculty to post tutorials. 36% of students lack confidence in the evidence base of the videos. In conclusion, it is important to analyze the quality of the material that students access. It is suggested that institutions increase the development of evidence-based instructional videos.
Dias, *et al.*, 2019 (19)	Evaluate the reliability of dental education content found on YouTube®. Determine whether users' interaction with the video is affected by the way the content was delivered.	Cross-sectional description	A YouTube search for dental procedure content was conducted using the keywords: "restorative dentistry", "pediatric dentistry", "orthodontics", and "oral surgery". The number of views, duration, category, retention rate and publication date were analyzed	Universities provided only 5% of the content on YouTube®. Older videos had more views per month ($p < 0.05$) and a better engagement rate ($p > 0.05$). Most users preferred long videos ($p < 0.05$), and the engagement rate was better for older videos ($p < 0.01$). Short videos had 70% user retention. In conclusion, most of the content did not meet the reliability criteria, so universities need to consider how their students use YouTube® and incorporate the findings into their curriculum.
Dias, *et al.*, 2019 (20)	Evaluate the video content offered by dental schools in the UK and the Republic of Ireland on their YouTube® channels and public websites.	Cross	They evaluated the free videos offered on UK and Republic of Ireland dental school websites and YouTube® channels viewed and configured according to their educational or non-educational purpose. The number of views, duration, category, and publication date were analyzed.	627 videos available on 83% of websites were evaluated. 9% was educational content. Most of the videos provided by universities were not educational and focused on promoting Dentistry courses. Most of the websites have shown a password protected area where you can offer quality content. In conclusion, there is limited availability of dental-related educational video content on dental college websites or YouTube®. Institutions must take steps to produce more open access material.
Fu, *et al.*, 2021 (21)	Examine perceived barriers to achieving clinical competency in endodontics and explain how YouTube® is used to supplement formal education in this discipline.	Cross-sectional descriptive	Graduate students in endodontics interviewed fourth-year dental students at New York University School of Dentistry. Questions were asked about perceived barriers to clinical competency in endodontics, experiences using YouTube® to learn about clinical endodontics, and preferences for learning in video format.	30 students were interviewed. 96.7% use YouTube® as a learning tool for dental procedures and 83.3% to learn about endodontics. Students primarily used YouTube® to build confidence and understand the flow of procedures. In conclusion, The use of YouTube® helps students overcome perceived educational and psychological barriers that have resulted in confidence and knowledge gaps in performing endodontic procedures. Students valued the easily accessible, limited-length video content where clinical procedures were performed on live patients.
Grillon & Yeung, 2022 (22)	Evaluate YouTube® videos that demonstrated panoramic radiographs in terms of preparation and positioning procedures, and operator safety procedures.	Cross-sectional description	A systematic search for YouTube® videos on procedures in radiology was performed. 40 videos were included and analyzed regarding content characteristics and their activity on the platform.	In general, the videos correctly explained the procedures, preparation and positioning of the patient. However, most of the videos did not demonstrate operator safety details regarding the use of proper personal protective equipment. The channel's view, comment, and subscriber counts were positively correlated with the likes count. In conclusion, doctors and students should make judgments about the content of instructional videos and consult other sources to complement the knowledge.
Hamid & Jaafar, 2021 (13)	To examine social media application use among dental students and investigate significant demographic variables regarding the use of social media for academic purposes.	Descriptive Cross	All dental students from Universidad Teknologi MARA were interviewed through Google Forms. The validated interview obtained results of demographic aspects, frequency of use of social networks and their opinion about social networks in education.	244 students were interviewed. 82.8% are subscribed to YouTube® and the platform is the fifth most visited social network. YouTube® provides more interactive videos and multimedia programs that are helpful in the learning process. In conclusion, social networks offer opportunities and challenges to explore different methods to assimilate social networks in the teaching and learning process to attract the interest of students.

Source: the authors

TABLE 2
Summary of Studies Included in the Review

Javed & Bhati, 2015 (11)	To explore the trend of use of social networks among postgraduate students and the usefulness of social networks in their academic performance.	Cross-sectional description	The study interviewed graduate students of Bachelor of Medicine, Bachelor of Surgery and Bachelor of Dental Surgery at Nishtar Medical College, Multan, Pakistan. A questionnaire on the use of social networks and a previous literature review were used.	The 162 respondents answered that the most used social network was YouTube®. Social networks are frequently used to obtain information. In conclusion, social networks play an effective role in academic performance, and it is recommended that they be used to discuss topics related to health, patient care and treatment.
Knösel, *et al.*, 2011 (10)	Systematically assess the informational value, intent, source, and bias of dental-related videos available on the	Cross-sectional description	YouTube® was searched for dental-related videos using system-generated rankings ("by relevance" and "most viewed") and two categories (Everyone and Education).	The results revealed a wide variety of dental information available on YouTube®. The purpose of these videos includes entertainment, advertising, and education. Videos categorized under Education have a
	Internet video-sharing platform, YouTube®		Each of the first thirty results was rated by two raters who completed a questionnaire.	higher degree of usefulness and informational value than those found in a broader search category. YouTube® and similar social networking websites offer new educational possibilities for dentistry.
Seo, *et al.*, 2018 (23)	Confirm the applicability of YouTube® as a video lecture platform for dental students and assess their learning attitudes towards the flipped classroom model	prospective cohort	69 second-year students from Dankook College of Dentistry, Korea were assessed on learning experiences after using YouTube platform prior to periodontics classroom for 2 semesters in 2016. The instructor uploaded the videos of the lectures to YouTube® before each class. At the end of the second semester, the students were surveyed through a questionnaire.	Of the 69 students, 76.8% always watched the lecture before class, 69.6% used smartphones, and 95.7% stated that they watched the lectures at home. 82.6% responded that video lectures were easier to understand than face-to-face lectures (82.6%) and that they would like to watch the videos again after graduating (73.9%). In conclusion, YouTube® is a suitable platform that facilitates students' self-directed learning by providing flexible and diverse learning ways for a flipped classroom.
Turkyilmaz, *et al.*, 2019 (24)	To evaluate the influence of e-learning in dental education according to the perception of doctoral dental students.	Cross-sectional description	A 14-question survey was conducted and distributed electronically to second-, third-, and fourth-year doctoral dental students at New York University. The survey was regarding the preferred electronic resources that students perceive have improved their academic performance.	255 students participated in the survey. The top three electronic applications with the greatest impact on their learning were: YouTube®, Bone Box and Google. 70% spend 1-4 hours per day on electronic resources for academic performance. E-learning had a significant effect on didactic and clinical understanding. In conclusion, the high preference of students for YouTube® suggests the use of this modality for the delivery of educational material.
Uma, *et al.*, 2021 (25)	To explore and compare the current use of social media among dental college students from two countries: Malaysia and Finland.	Transversal Multi-institutional	A survey was conducted among dental students for the academic year 2020-2021 from two dental schools in Malaysia (Manipal Melaka College of Medicine and University of Malaya) and Finland (University of Helsinki and University of Oulu), evaluating the use of social networks and perceptions of the use of social networks in relation to dentistry.	WhatsApp, YouTube®, Instagram, Facebook and Snapchat were the most popular networks. The most used application was WhatsApp. Students in Malaysia spent more hours per week using the platforms as study tools than students in Finland. Malaysian students used the YouTube® platform more than Finnish students. In conclusion, the findings offer evidence that dental students extensively use social networks and the use between educational and personal reasons is related.

Source: the authors

Most of the studies had a cross-sectional study design (11 studies), and one was a prospective cohort study. Seven studies evaluated only the YouTube® platform in dental education, three studies analyzed social media in general and dental education, and two studies evaluated YouTube® with other sites. Two studies were multi-institutional.

How has the YouTube® platform been used by dental students?

Studies show that YouTube® is used mainly to study clinical procedures. Among the frequent uses there were entertainment, educational purposes, and non-academic tutorials. Users are used to watching long videos, although short videos showed up to 70% retention. Older videos showed more interactions than new ones.

Furthermore, in one of the studies, students mainly used YouTube® to improve confidence and understand the flow of clinical procedures in endodontics. Regarding categories, YouTube® videos classified as educational were considered useful and informational value more than those found in a broader search category.

How often is YouTube® used compared to other social networks?

The YouTube® platform remained among the top five most used social media sites by dental students. It was listed as the most visited social network for educational purposes in a 2015 study and as one of the platforms with the greatest impact in e-learning. From the videos and channels included in the platform, a study concludes that the count of views, comments, and subscribers of channels were positively correlated with the count of likes.

What scientific evidence does YouTube® provide to students?

In one study, students argued that YouTube® videos were not consistent with what they learned in college. Likewise, 36 % of students do not have confidence regarding the evidence provided by the videos. Another study recommended that universities should consider how their students use YouTube® and incorporate the findings into their curriculum. One problem raised by students was that most websites have shown a password-protected area where quality content may be offered. Another problem presented was that the videos of clinical procedures did not present details regarding the operator and equipment. On the other hand, five of the studies did not show dissatisfaction and evaluated it as a suitable platform that facilitates learning.

DISCUSSION

We found some literature available to researchers on the use of the YouTube® platform in dentistry. Although there is a diversity in the tools, aims/purposes, and types of studies, the sampled analyzed allowed us to recognize how that platform has been used in dental education. Twelve studies were reviewed to answer the study's three research questions. The findings show that students use the YouTube® platform for entertainment, educational purposes, and to access non-academic tutorials. With respect to other social networks, the YouTube® platform is positioned among the most frequently accessed by dental students. Finally, there is some mistrust about the content of the videos on the platform.

The implementation of digital technology, educational platforms, and applications has prompted teaching and learning activities between educators and students to be conducted with the use of digital technology. With the disruption of the COVID-19 pandemic, education worldwide changed drastically (26). In addition, in recent years, e-learning has emerged as a tool to improve dental education. For education to be successful, it is important to learn about student preferences and applications they use to incorporate technologies into the learning experiences to improve their attendance and perception (24). Social networks have become versatile tools that have an impact on communication, personal relationships, and didactics. For dental educational institutions, an active presence in social networks is considered essential to improve traditional teaching methods (27). Professors should instruct students about the benefits of social media and help them recognize the associated dangers when using them, as well as to avoid inappropriate use (28).

Dental education involves learning instructors' skills, both didactic and clinical, to students (26). Students observe the procedures that professors perform step by step, then perform them on laboratory models, and then carry them out on patients. As a complement to what is covered in class, students seek contents that

allow them to visualize and/or broaden their knowledge. Likewise, educators are obliged to look for teaching alternatives to increase learning (14). An example of this is the use of videos in dental education, which has shown benefits in the basic sciences and clinical practices (6,23). Dental students prefer the use of videos over other online tools and traditional formats (28). The findings of this study show that YouTube® is considered an effective teaching-and-learning tool in which students and instructors benefited by facilitating the interactive exchange of content. Studies in other areas use YouTube® for entertainment, information search, and academic learning as the main reasons for use (29). The present study confirmed this trend and reveals students improve their confidence and understand of clinical procedures (21).

The findings of this study support that YouTube® has educational videos, even though there is uncertainty about the quality of the information available. Self-learning could be affected by accessing videos of poor quality, which are misleading, and/or deliver inconsistent content. According to Dias, et al., (19) only 5 % of the content on YouTube® is created within universities. A systematic review evaluated the reliability of content related to oral medicine on YouTube® and concluded that the platform represents a dynamic device that disseminates medical-scientific content; however, most of the information collected in the literature shows a lack of appropriate knowledge. According to the European Commission, online disinformation can be contended by focusing on five pillars: increasing transparency, promoting media and information literacy, empowering users, safeguarding the media ecosystem, and investigating the impacts of disinformation (30). It is important that students are able to discern the reliability of information, and educators instruct and promote evidence-based dentistry.

A useful tool for evaluating online content are the criteria created by the University of California Berkeley Library (31), which are: authority, purpose, publication and format, relevance, updating, and documentation. The content should allow users to verify authors, affiliations, and publications. Scrutiny of the purpose provides a glimpse of why certain content is produced. A publication will be more reliable if it is peer-reviewed and produced by a recognized think tank. The importance of the content in areas of study and interest should be analyzed. The date of publication of a content used to support a video is necessary to know how current and relevant it is. All videos should cite their sources of data, so anybody could verify the quality of references. If students take these criteria into account, they will find more scientific evidence in YouTube® videos.

With the frequent usage and importance of the YouTube® platform in dental education, the evaluation of scientific evidence of the contents is essential. Future contributions to the platform, by individuals or educational institutions, should focus on developing content in a systematic way so that users receive quality information that is supported by evidence-based dentistry. This study shows an overview of the YouTube® platform as an educational tool in dentistry. Future studies could be carried out to perform quantitative analyses or to review the type and level of scientific evidence of scientific publications on this topic. The study aims to motivate dental educators to promote the use of the platform as an educational tool and the creation of new content based on scientific evidence.

CONCLUSIONS

The use of the YouTube® platform is valuable for educational purposes by facilitating the learning, for instance, of clinical procedures. Nevertheless, the type and level of scientific evidence provided in videos must be reviewed.

RECOMMENDATIONS

There is still distrust of the evidence that videos contain, so it is recommended to review the quality of materials and educational institutions to increase the creation of videos based on strong scientific evidence.

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Notes

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