Conflicting demands that dentists and dental care professionals experience when using social media: a scoping review

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Key points

Using social media is a source of conflicting demands for dentists and DCPs but there is limited information on how these should be managed.	More research is required to understand the nature of the conflicting demands experienced when using social media and to inform guidance on managing these conflicting demands.	Research should include the opinions of all stakeholder groups, including patients.

Abstract

Introduction There are many conflicting demands for dentists and dental care professionals (DCPs) when using social media, for example between using social media for marketing and as professional provider of information. To gain a fuller understanding of how dentists/DCPs should optimally use social media, these conflicting demands need to be explored. The aim of this scoping review was to map out the current state of the literature describing the conflicting demands encountered by dentists and DCPs when using social media and the approaches used to manage these conflicting demands.

Methods A scoping review was carried out. PubMed and Web of Science Core Collection were searched using inclusion and exclusion criteria. Data was extracted from the identified articles and analysed.

Results The review identified 39 articles for inclusion. Conflicting demands were related to marketing and education with little information about how these conflicting demands can be managed.

Conclusions The published literature on dentists'/DCPs' use of social media highlights that there are conflicting demands and little advice on management strategies. To gain an understanding of these conflicting demands, further research is required, including looking at the patient perspective, to inform future practice.

Introduction

Use of social media has increased rapidly in recent years with sites including Twitter, Facebook, YouTube and Instagram becoming part of mainstream media. Social media is defined by Kaplan and Haenlein as 'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content'.[1] Web 2.0 refers to the technology and software that allows constant modification of online content by individuals and groups.[1] 'User generated content' is content that is widely (eg to a social media group) or publicly available, is created rather than reproduced, and is not created for professional purposes.[1] The main drawback of this definition is that it excludes social media created for professional purposes. In this article, social media created for professional purposes was included.

Social media can be considered to encompass blogs, social networking sites (like Facebook), content communities (like YouTube), and collaborative projects (like Wikipedia) as well as virtual worlds.[1] Data from the Office for National Statistics for 2018 showed that 65% of adults used social networking sites and 62% used YouTube (or similar).[2] Social media use has become ubiquitous in wider society and has therefore had an impact on dentists and dental care professionals (DCPs). Table 1 details the different types of social media and some examples of their use in dentistry.

However, use of social media is not without problems, eg cyberbullying and misinformation. As for the general public, dentists/DCPs are also encountering problems including unwanted friend requests and messages (from patients) as well as negative comments from colleagues. Resilience is required to help dentists/DCPs deal with this negativity in a constructive manner.[10] As dentists/DCPs often only present their successful cases, social media can also lead to feelings of inadequacy for other users and unrealistic expectations from patients.[11] In addition, there have been disciplinary actions due to social media use.[12] Two dental nurses were reprimanded due to comments posted on social media and a dentist's fitness to practise case included accusations of offensive posts on the GDPUK website.[13,14]

The benefits of using social media versus the potential for negative repercussions mean that using social media can be a source of conflicting demands for dentists and DCPs.

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Table 1 Types of social media and examples of their use in dentistry			
Type of social media	**Description**	**Example of this type of social media**	**Example of use in dentistry**
Blogs	Blogs consist of journal or diary style entries on a topic chosen by usually one author.[1]	Twitter is based on microblogging.[1] It allows users to follow one another and to connect over shared interests.[3]	Kevin O'Brien's blog about orthodontics.[4] The political campaign against the General Dental Council's increase in the annual retention fee (ARF) was widely discussed on Twitter through the hashtag 'ARFhike'.
Social Networking Sites	Social networks involve some form of personal profile and lists of users; users can then connect via profile access and/or messaging systems.[1]	Facebook allows users to create a multi-dimensional profile. Virtual friendships allow for profiles to be viewable by others.[3] LinkedIn's focus is for professional contacts and development.[3] Instagram is a photograph and video sharing site. As well as sharing posts with followers it can be linked to other forms of social media.	Mc Crory and Jacobs' poll of dentists on the website gdpuk.com found that 72% had a Facebook account. Of those with an account, only 37% posted on it regularly.[5] The Facebook group 'For Dentists, By Dentists' is used by dentists to discuss issues relevant to dentistry – clinical, academic and managerial.
Content Communities	Content communities involve the sharing of media.[1]	YouTube is a video sharing site - the intention of the videos being entertainment, information and advertising.[6]	YouTube videos of Whoopi Goldberg speaking about periodontal disease.[7] Dentists use YouTube videos for their educational value eg to watch dental procedures.[6,8]
Collaborative Projects	Collaborative projects allow for multi user content creation.[1]	Wikipedia is a website that provides information on a vast array of topics in a similar way to an Encyclopaedia.[1]	The information provided on Wikipedia is not necessarily accurate or evidenced-based best practice. Despite this, internet users – patients and clinicians - often believe it to be true.[1]
Virtual Worlds	Virtual worlds are online simulated environments.[1]	Linden Lab's Second Life uses custom avatars set in a virtual world – there are public areas (open to everyone) and islands (private groups).[9]	Second Life has been used to provide a simulated environment for dental education e.g. infection control scenarios.[9]

To help dentists/DCPs use social media and to inform future guidance a greater understanding of the conflicting demands is required, but this is a complex issue.

The aim of this scoping review was to map out the current state of the literature describing the conflicting demands encountered by dentists and DCPs when using social media and the approaches used to manage these conflicting demands. To address the aim the two questions considered were:

- What are the conflicting demands dentists and DCPs experience when using social media?
- How are the conflicting demands currently managed?

This information will help inform policy and practice as well as identify gaps in the existing literature to inform future research.

Method

Due to the broad nature of the questions, a scoping review was chosen for this literature review. A scoping review allowed the literature to be mapped to assess the types of literature available and identify knowledge gaps.[15] The PRISMA-ScR checklist was used to ensure appropriate reporting.[16] The scoping review was carried out according to Arksey and

Table 2 Search terms	
Search term	**Terms included**
Health personnel[19]	Allied Health Personnel; Anatomists; Anaesthetists; Audiologist; Caregivers; Case Managers; Coroners and Medical Examiners; Dental Staff; Dentists; Doulas; Emergency Medical Dispatchers; Epidemiologists; Faculty, Dental; Faculty, Medical; Faculty, Nursing; Health Educators; Health Facility Administrators; Infection Control Practitioners; Medical Chaperones; Medical Laboratory Personnel; Medical Staff; Nurses; Nursing Staff; Nutritionists; Occupational Therapists; Optometrists; Personnel, Hospital; Pharmacists; Physical Therapists; Physician Executives; Physicians; Veterinarians
Internet[20]	Internet access; Social media; Web archives.

O'Malley's framework.[17] This is the most widely used framework for scoping reviews. The five stages of a scoping review as per Arksey and O'Malley's framework are:

- Identify the question
- Identify the relevant studies
- Study selection
- Charting the data
- Collating, summarising and reporting the results.

Identify the question

We chose two questions for this scoping review and, as detailed above, the questions chosen were:

- What are the conflicting demands dentists and DCPs experience when using social media?

- How are the conflicting demands currently managed?

Identify the relevant studies

As PubMed database encompasses Medline and other life sciences journals, it was used to ensure the available dental literature was searched.[18] Web of Science was used in addition to PubMed to ensure social science journals were included. The search strategy used on PubMed was Health Personnel AND Internet. These terms were selected as they include a wide variety of topics (Table 2). The search was repeated using Health Personnel AND internet as topics for Web of Science's Core Collection. The searches were repeated by another author (C.W.S.) to

Fig. 1 Study selection: applying the inclusion and exclusion criteria
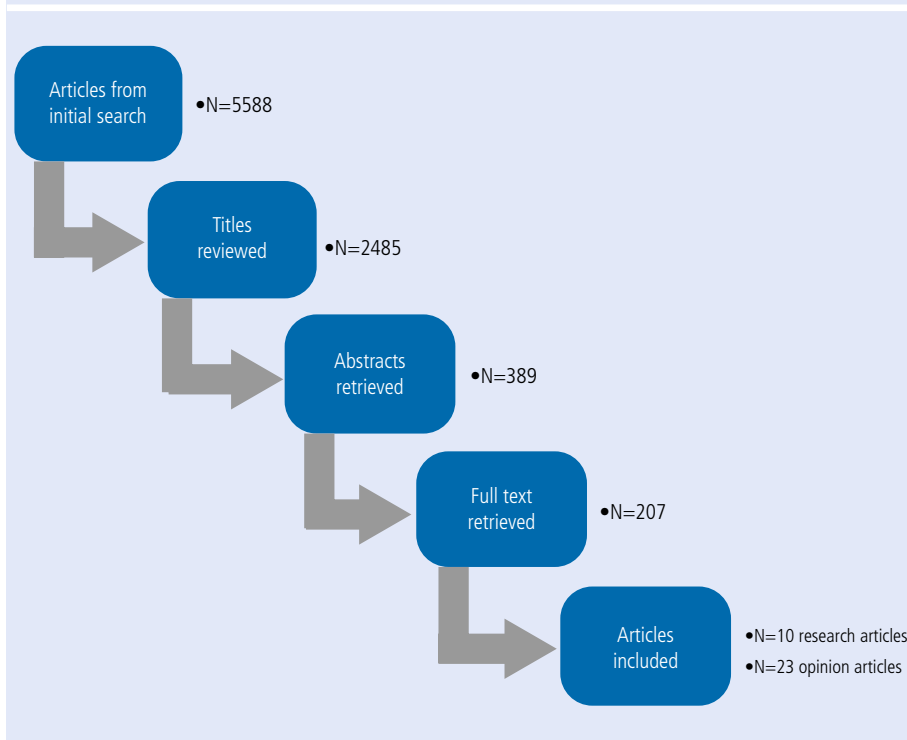
ensure no articles suitable for inclusion had been missed.

Exclusion criteria were articles not available in English and articles published before 2012. The year 2012 was chosen as this was an important year for social media; it was the year Facebook became publicly accessible, Pinterest grew in popularity and several major world events were experienced through social media.[21] The search was carried out on 5 October 2018. Inclusion criteria were articles including dentists and/or dentistry and articles about social media (for example, articles that used social media or the internet to administer surveys) were not included. Social media was defined as *per* Kaplan and Haenlein's definition.[1] All study designs were included. All article types were included with the exception of guidance documents.

Study selection

The above detailed search yielded 5,588 results. Initially the exclusion criteria of date and language were applied; this left 2,485 titles to be reviewed. The broad search criteria meant that it was possible to exclude some articles based on the title, for example, those that specifically mentioned a medical speciality. If an abstract was available this was then reviewed to assess whether the article met the inclusion criteria. If there was no abstract available or if it was not possible to make an assessment based

on the abstract, the full text was reviewed. After applying the inclusion and exclusion criteria, there were 33 articles to be reviewed (Fig. 1). This included 10 research articles and 23 opinion papers. The reference lists of the included research articles were checked for further relevant studies. A further six articles were identified – four opinion papers and two research articles. Therefore, there were 39 included articles – 27 opinion papers and 12 research articles.

Charting the data

For the research articles, a data charting form was created by the research team and data were extracted from the 12 articles. One author (A.C.G.) collected the data and, as *per* Arksey and O'Malley's framework,[17] the data from the twelve studies were charted (Table 3). The majority of the studies were surveys (n = 10). Khatoon *et al.*, Synman and Visser and Abdelkarim and Sullivan included qualitative components in their design.[24,25,28] The study samples were dental educators, dentists, DCPs or dental students. None of the study samples included patients. The studies covered a broad range of social media types. Khatoon *et al.* investigated instant messaging in the learning environment.[24] Using Kaplan and Haenlein's definition instant messaging would not be included as social media but as social networking was explicitly included, this

study was included in our results.[1,24] Most of the studies were carried out within the United States of America. This means that they may lack applicability in the UK as healthcare provision is different between the two countries

The 27 opinion papers mostly had a marketing (n = 7) or education (n = 10) focus (Table 4). Although it was not the primary focus, the ten other articles all referred directly or indirectly to aspects of marketing or education.

Collating, summarising and reporting the results

The data from the articles were considered in the context of the scoping questions:
- What are the conflicting demands dentists and DCPs experience when using social media?
- How are the conflicting demands currently managed?

As detailed above, the research and opinion articles included in this scoping review were heterogeneous, but they could be separated in to two broad themes: marketing and education. The answers to the above questions were therefore considered within these two themes. Different aspects of education were covered in the articles but those on marketing only considered its use to promote a dental practice.

What are the conflicting demands dentists and DCPs experience when using social media?- Marketing used to promote a dental practice

Kothari *et al's*, Synman and Visser's and Haas and Park's surveys illustrated that social media was being used by dentists/DCPs for marketing their practices.[22,28,33] Synman and Visser's and Haas and Park's surveys also found that of those who were not using social media for marketing a number were planning to do so.[28,33] Synman and Visser and Haas and Park also explored the reasons for not using social media for marketing; this included insufficient time, insufficient knowledge and security concerns as well as concerns regarding its effectiveness.[28,33] The opinion articles generally presented the use of social media for marketing in a positive light, eg only a 'small budget' is required.[34] There is a conflict between dentists/DCPs wanting to use social media for marketing for their businesses but being concerned about the potential pitfalls and the impact on other aspects of their lives. Patients' opinions were not explored in these surveys.

Table 3 Charting the data: research articles included

Author(s)	Year of Publication	Location	Setting	Study Design	Study Population	Type of Social Media
Kothari et al.[22]	2016	US	Marketing (general practice)	Survey	Members of the American Academy of Paediatric Dentists	Content communities, Social network
Gonzalez and Gadbury-Amyot[23]	2016	US	Education	Survey	Dental Students	Blog
Khatoon et al.[24]	2015	UK	Education	Interviews	Dental Students and Faculty members	Social network
Abdelkarim and Sullivan[25]	2014	US	Education	Survey	Dental Students and Faculty	All social media
Henry and Pieren[26]	2014	US	Education	Survey	Dental Hygiene Directors	All social media
De Groote et al.[27]	2014	US	Education	Survey	Faculty members (including dental)	All social media
Snyman and Visser[28]	2014	South Africa	Marketing (general practice)	Mixed methods	Members of the South African Dental Association	All social media
Khatoon et al.[29]	2014	UK	Education	Survey	Dental Students	Blog, Content communities, Social network
Beebe et al.[30]	2014	US	Education	Survey	Dental Hygiene Students and Faculty	Blog, Content communities, Social network
Arnett et al.[31]	2013	US and Canada	Education	Survey	Dental School Faculty Members	Blog, Content communities, Social network
Hamm et al.[32]	2013	Not restricted	Education	Scoping review	Health care professionals and trainees (including dentists)	All social media
Haas and Park[33]	2012	US	Marketing	Survey	Members of the American Academy of Orthodontists	Blog, Content communities, Social network

Table 4 Charting the data: opinion articles included

Focus	Number of articles	Authors
Marketing	7	Brown,[34] Drone,[35] Henry,[36] Hughes,[37] Jorgensen,[38] Levin,[39] Meerschaert.[40]
Education	10	Risk,[41] Spallek et al.,[42] Spallek et al.,[43] Khatoon et al.,[44] Parkinson and Tuner,[8] Stein et al.,[45] Hatch et al.,[46] McAndrew and Johnston,[47] Oakley and Spallek,[48] Salajan and Mount.[49]
Other	10	Affleck and Macnish,[50] Mc Crory and Jacobs,[5] Neville and Waylen,[51] Roucka et al.,[52] Foster,[53] Hancocks,[54] Peltier and Curley,[55] Schafer,[56] Chan,[57] Perel.[58]

How are the conflicting demands managed?- Marketing used to promote a dental practice

Synman and Visser suggested training courses on social media marketing with input from stakeholder groups. They also called for clear guidelines on how dentists should use social media for marketing.[28] As the primary focus of Kothari et al.'s survey was not social media, it did not offer any specific management strategies.[22] Despite acknowledging the advantages and disadvantages of social media marketing, Haas and Park also did not offer any specific management strategies.[33] The opinion articles offered some practical advice on how to use social media for marketing. For example, posting information about events and posting personal as well as professional content.[34,36] However, this was based on the authors' opinions.

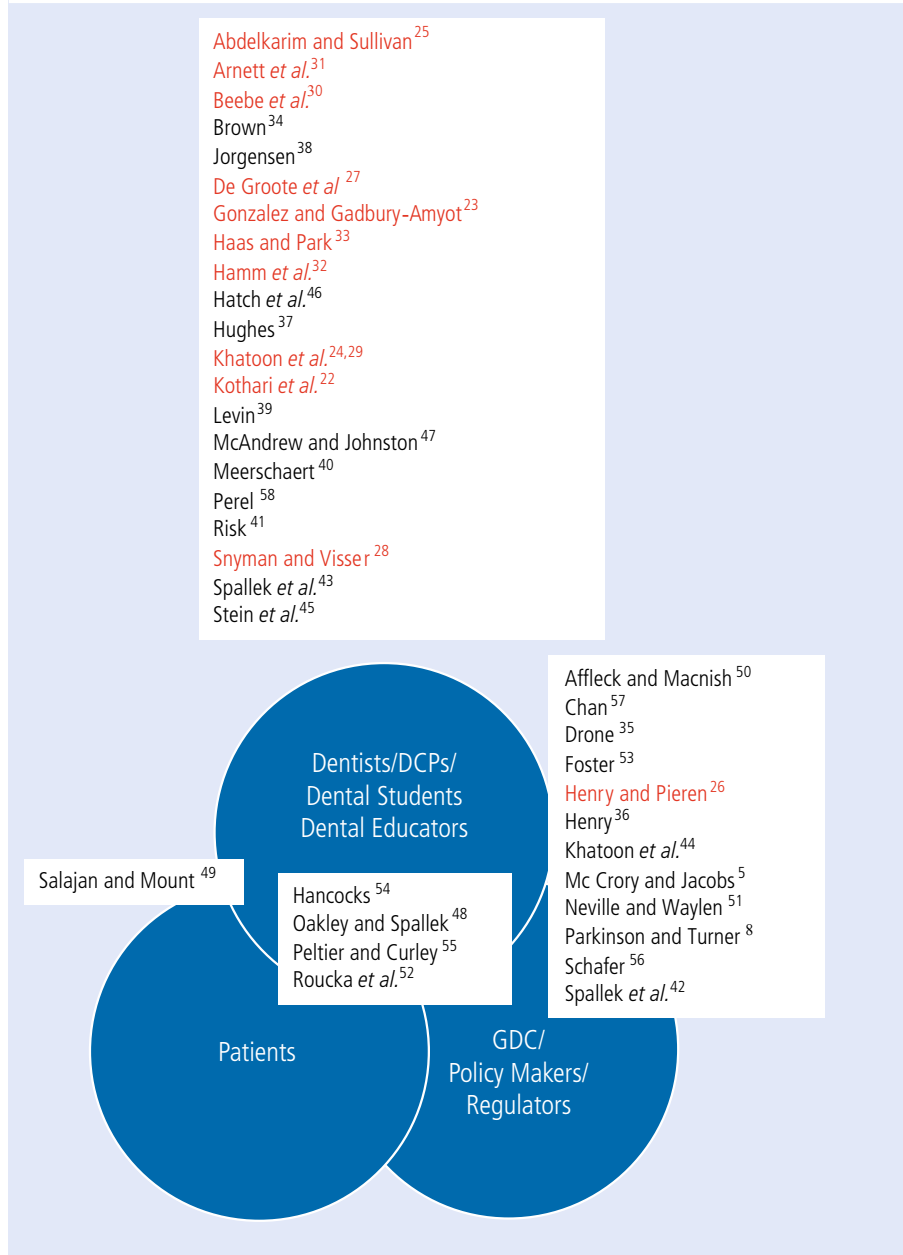### What are the conflicting demands dentists and DCPs experience when using social media?- Education

Students who have largely grown up using social media are driving new forms of pedagogy.[43,44] Gonzalez and Gadbury-Amyot's survey found that students did think Twitter was a useful tool for learning and teaching.[23] Khatoon et al. also found that students were keen to incorporate social media into their education – they wanted to use the instant messaging features on social networks to communicate with faculty members.[24] A conflict arises as faculty members were more reluctant and identified problems with using social media for teaching. The opinion articles by McAndrew and Johnston and Khatoon et al. discussed some of these problems.[44,47]

Arnett et al.'s study found that faculty were unsure about how to include social media and how useful it was.[31] In Khatoon et al.'s study, faculty were not keen on introducing instant messaging as it would not encourage students to develop independent thinking skills. Faculty were also concerned about maintaining boundaries.[24] There is a conflict between what students think is useful *versus* what faculty can provide.

Henry and Pieren's survey highlighted that programme directors (of dental hygiene programmes) were concerned about conduct when using social media. The respondents detailed violations of social media policy at their institutions. These included patient confidentiality, conduct issues, unprofessional comments relating to the school, illegal activity and discrimination. There was a large variation in whether schools had social media policies specific to their programme or institution. There were some respondents who did not have specific social media policies.[26] The importance of clear policy was voiced in several

Fig. 2 Mapping the included studies. Text in red indicates research articles, text in black indicates opinion papers

Abdelkarim and Sullivan [25]
Arnett *et al.* [31]
Beebe *et al.* [30]
Brown [34]
Jorgensen [38]
De Groote *et al* [27]
Gonzalez and Gadbury-Amyot [23]
Haas and Park [33]
Hamm *et al.* [32]
Hatch *et al.* [46]
Hughes [37]
Khatoon *et al.* [24,29]
Kothari *et al.* [22]
Levin [39]
McAndrew and Johnston [47]
Meerschaert [40]
Perel [58]
Risk [41]
Snyman and Visser [28]
Spallek *et al.* [43]
Stein *et al.* [45]

Affleck and Macnish [50]
Chan [57]
Drone [35]
Foster [53]
Henry and Pieren [26]
Henry [36]
Khatoon *et al.* [44]
Mc Crory and Jacobs [5]
Neville and Waylen [51]
Parkinson and Turner [8]
Schafer [56]
Spallek *et al.* [42]

Dentists/DCPs/ Dental Students Dental Educators

Salajan and Mount [49]

Hancocks [54]
Oakley and Spallek [48]
Peltier and Curley [55]
Roucka *et al.* [52]

Patients

GDC/ Policy Makers/ Regulators

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of the opinion articles.[8,42,43,48] The differences in policy between schools and the fact that students are being reprimanded, makes social media a potential source of conflict. This also illustrates the significance of clear regulation and regulatory bodies for social media use.

How are the conflicting demands managed?- Education

The conflicting views on the usefulness and appropriateness of the adoption of social media for learning and teaching suggest that further research is required in this area. Authors did offer advice, for example, Salajan and Mount explored the benefits, problems and opportunities afforded by the wiki they created for teaching.[49] Arnett *et al.*'s article detailed ways faculty could use different social media tools; this was presumably to educate readers.[31] Other management strategies included being mindful of differing opinions when introducing new technologies.[24,31] Those who are keen to introduce new technologies can be limited by the existing virtual learning environments lacking some of the capabilities that social media platforms have. The rapid pace of evolving technology may also introduce challenges for management strategies.[8]

Creating clear and practical social media policies presents problems – the American literature regularly cites the first amendment right to free speech as an obstacle to creating social media policies; this was explored by Parkinson and Turner.[8] Henry and Pieron discussed the implementation of social media policies. They suggested incorporating teaching on professional use of social media into existing ethics and professionalism modules.[26] Several opinion articles also referred to the incorporation of teaching on professional use of social media, including obstacles that may be encountered, eg the high risks of exploratory learning.[8,43,46,48]

Discussion

Using a scoping review design was an advantage of this study as it allowed for a broad overview of the available literature. As social media research is a rapidly evolving field with a variety of methodologies being employed, a scoping review was an appropriate method for this literature review.[15,59] An advantage of the design was the broad search terms used but it may be that articles were still missed depending on how they were labelled.[60] It was difficult to capture all of the relevant articles in the literature as there appeared to be a lack of convention on how they were labelled (eg which key words or MeSH terms were used). This may be because this is an emerging field of research. There were also a large number of opinion articles in the relevant literature and many had no labelling. The search could have been broadened by including free text terms. Despite the risk of missing articles, a large number of articles were captured thus allowing a broad range of literature to be mapped (as per the aim of a scoping review). The review was also limited by not incorporating other databases.

The scoping review could have also considered the wider healthcare literature to gain an insight in to the conflicting demands experienced by other healthcare professional groups on social media. For example, Smailhodzic *et al.*'s systematic review found that social media use by patients affected the patient-professional relationship.[61] In addition, the General Dental Council's (GDC's) *Guidance on using social media* covers many of the same areas as the guidance documents of other healthcare professional groups.[44,62] Therefore there will be some similarities between the conflicting demands experienced by dentists/DCPs and other health care professional groups. This scoping review was

restricted to dentistry because the relationship between dentists/DCPs, the GDC and patients is different compared with other healthcare professional groups and their regulators and patients. It differs because of the different working environments; for example, the majority of dentists/DCPs work in small teams to run small businesses – unlike most hospital doctors.[63] The nature of the offline relationship subsequently impacts upon the nature of the online relationship. For example, a social media post by a dentist/DCP may be interpreted in the context of how successful their business is; they are having a nice holiday, so their business must be doing well – are their charges too high?

The aim of this scoping review was to map out the current state of the literature describing the conflicting demands encountered by dentists and DCPs when using social media and the approaches used to manage them. The review also sought to assess the type of literature available and to identify knowledge gaps to inform future research.

An iterative method – such as a scoping review – allowed for this review to adapt to the studies available for mapping the literature.[64] Although the primary focus of scoping reviews is not the quality of the research, in mapping the literature the conclusions that could be drawn about the conflicting demands dentists/DCPs experience were restricted by the studies.[64] As expected, the studies were heterogeneous and in many of them the conclusions were limited by the study design. There was a large number of opinion articles compared with the number of research articles. This potentially indicates that there is an interest in the topic but a lack of evidence. Many of the research articles were surveys – these can only provide a limited amount of information as they do not allow participants to explore the reasons for their choices. Research employing a qualitative design would allow for greater exploration of the conflicting demands.

The literature informed us that use of social media is an area of interest for dentists and DCPs. Marketing and education were identified as two sources of conflicting demands for dentists and DCPs when using social media. There was little information available explaining the conflicting demands and how these are managed. The literature also lacked information about the views of stakeholder groups who may have an interest in the behaviour of dentists and DCPs (eg patients, GDC).

The lack of information about the views of the stakeholder groups is illustrated in Figure 2, which shows lists of authors depending on which stakeholder opinions are considered in their article. It shows how the literature very much focuses on the opinions of dentists, DCPs, dental students and dental educators. There is a paucity of literature particularly concerning patients' opinions. Dentists and DCPs rely on patients for their practices to be successful, therefore the views of patients are important to dentists/DCPs. The GDC have published guidance on using social media therefore it can be assumed that this is an aspect of dentists/DCPs' behaviour in which they are interested.[62] As dentists and DCPs are still encountering problems the guidance is being ignored, misinterpreted or is insufficient.[62] This may be because the extent to which rules are followed is a social construction, meaning that guidance will often be interpreted as the reader wishes.[65] As their mandate is protecting patients, the GDC are likely to be restrictive in their advice but to be able to implement it, this advice must be practical for dentists/DCPs.[66] If it is restrictive, the guidance may also be prohibitive of a positive social media dialogue between dentists/DCPs and patients. Despite patients and the GDC having an interest in this subject, the literature focused on the views of dentists, DCPs and dental students and educators.

Conclusions

Social media, despite its complexities, has many benefits for dentists and DCPs. Regardless of the difficulties, dentists/DCPs continue to use many different social media platforms. This scoping review found that the number of research articles was small compared with the volume of opinion articles. The review confirmed that using social media is a source of conflicting demands for dentists and DCPs and found that the main areas were related to marketing and education. None of the articles explained the conflicting demands and there was a lack of information about the views of other stakeholder groups, including patients. Use of social media by dentists and DCPs is a complex issue and future practice and policy requires greater understanding of the conflicting demands. This requires further research and should include the views of other stakeholder groups, including patients.

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