Social Media Use and Marketing within the Orthodontic Practice in Malaysia

Yasmin Kamarudin[a], Delia Fang Fang Low[b], Abang Muhammad Zulhusmi Abang Sulaiman[c], Nor Nadia Zakaria[a]*

[a]Department of Paediatric Dentistry and Orthodontics, Faculty of Dentistry, Universiti Malaya, 50603 Kuala Lumpur, Malaysia

[b]Faculty of Dentistry, Universiti Malaya, 50603 Kuala Lumpur, Malaysia

[c]UTC Dental Clinic, Jalan Kwangtung, 98000 Miri, Sarawak, Malaysia

*Corresponding author: nornadiazakaria@um.edu.my

ABSTRACT

This study investigated personal and professional social media use among orthodontists in Malaysia, to determine marketing strategies and to identify potential determinants associated with their behaviours. A cross sectional study using an online questionnaire distributed to members of the Malaysian Association of Orthodontists (MAO). Data were analysed using SPSS software to derive descriptive statistics and analysis of variance was applied to compare responses between age groups and working sector. Responses to open ended questions were analysed using thematic analysis. A response rate of 41% was obtained ($n = 72$). Almost all respondents were social media users with Facebook being the most common online platform. Majority relied on traditional methods of marketing such as good service and image practice (94.4%), word of mouth (94.4%) and referrals (93.1%). Only 9.7% of respondents had adopted social media marketing but 23.6% had future plans to adopt it as their marketing strategy. Difference in knowledge of social media marketing was significantly different between age groups ($p = 0.024$). Concerns over patient confidentiality ($p = 0.016$) and risk of breaching online professional behaviour ($p = 0.025$), as reasons discouraging social media marketing was statistically significant between work sector groups. Most orthodontists in Malaysia use social media for personal use but only a minority incorporate it into their marketing strategies. Majority see its potential and predict its use will increase in the future.

Keywords: E-professionalism; orthodontic marketing; orthodontic practice; social media marketing

INTRODUCTION

The introduction of Web 2.0 technologies in the 21st century has led to a shift from static websites to a more dynamic interface, giving rise to what we know now as social media. Kaplan & Haenlein (2010) described social media 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". They further distinguish social media into six categories: blogs, collaborative projects

(e.g., Wikipedia), social networking sites (e.g., Facebook), content communities (e.g., YouTube), virtual social worlds (e.g., Second Life), and virtual game worlds (e.g., World of Warcraft). With 3.6 billion social media users globally, the reach of social media is widespread, and information can instantly be shared across the world through the click of a button (Tankovska, 2021b). The increase in smartphone use, combined with the introduction of affordable mobile data plans has contributed to the penetration of social media, with Facebook and YouTube being cited as the most popular platforms globally with more than 2 billion users each (Tankovska, 2021a). In recent years, social media has transcended from just being a tool for adolescents to share their personal lives (messages, pictures) into becoming a widely used platforms for all ages to interact, share information, consume news, survey products, and much more.

In dentistry, social media has been used in a variety of ways ranging from blogging to voicing out opinions on dental topics, creating Facebook groups for online discussion among peers, uploading patient educational videos on YouTube, or incorporating Second Life simulation in dental education (Greer *et al.*, 2019). Another emerging trend of social media in dentistry is its use as a marketing tool. The role of social media in marketing has been described as either active or passive. The passive approach allows the marketer to play a lesser role in marketing as it occurs through user-generated content such as sharing and communication between existing and prospective consumers. In contrast, the active approach involves the conscious participation of the marketer to employ marketing strategies to entice consumers (Constantinides, 2014). Hence, the term social media marketing is broad-reaching and is not only limited to paid online advertisements, as some may believe. Social media is a great tool for marketing due to its far reach, low cost, speed and improved interactivity and connection with the consumers instead of having a one-way dialogue. There have been reports of social media marketing within the dental practice in America, Middle East and Africa (Henry *et al.*, 2012; Snyman & Visser, 2014; Hamasha *et al.*, 2019). Building a strong relationship between clinician and patient is a key feature of successful marketing and is achievable through online communities where patients get to interact and gain relevant information or advice regarding treatment. This form of marketing is quickly surpassing traditional forms such as radio, television, newspaper, magazine, direct mail and billboards (Nelson *et al.*, 2015).

Although there have been reports of social media marketing within the dental practice, evidence of its use among orthodontists is limited and needs to be explored (Henry *et al.*, 2012; Snyman & Visser, 2014; Hamasha *et al.*, 2019). Furthermore, no such evidence has been reported in Asia. Hence, this study aims to investigate personal and professional use of social media among orthodontists in Malaysia, to determine marketing strategies and to identify potential determinants associated with their behaviours.

MATERIALS AND METHODS

Ethical approval was granted by the Medical Ethics Committee, Faculty of Dentistry, Universiti Malaya (DF CD2007/0044 [U]). This was a cross-sectional study involving a self-administered online questionnaire to investigate social media use and social media marketing among orthodontists in Malaysia. For this study, social media was defined according to Kaplan & Haenlein (2010). Based on their definition, emails and instant text messaging were excluded as they fail to fulfil the scope of user generated content which requires content to be published publicly on websites or smaller groups of social networking sites. The Checklist Results of Internet E-Surveys (CHERRIES) was used as a guide for reporting the research method (Eysenbach, 2004).

Convenience sampling was used by selecting the sample from members of the Malaysian Association of Orthodontists (MAO) as no official Malaysian national registry of orthodontic specialists was available during the time of data collection. Non-practicing members, student members and international members were excluded as they did not meet the scope of the study. A total of 177 MAO members fulfilled the inclusion and exclusion criteria for this study.

The questionnaire instrument was constructed in English language and adopted from Snyman & Visser (2014) and modified accordingly to suit the study population. Modifications included rephrasing questions to improve clarity, dropping redundant questions that did not answer the study objectives, and modifying answer options to suit the study population. In total, there were 22 items divided into 4 sections: (1) Demographic information and internet use, (2) General social media use, (3) Marketing in the orthodontic practice, and (4) Social media and orthodontic marketing. Responses were gathered using a mixture of multiple-choice, 4-point Likert scales (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), and one open-ended question encouraging respondents to share their personal views and opinions on the topic. Adaptive questioning was used for the questionnaire where participants were directed to certain questions based on their responses. This reduced the length and complexity of the questionnaire for the participants. Content and face validation were done prior to its use. The contents of the questionnaire were modified based on literature findings as well as feedback from an expert panel consisting of two orthodontists and one public health specialist. The content was piloted on 10 subjects consisting of orthodontists and modifications were made. The questionnaire was converted into an online questionnaire using Google Forms to facilitate dissemination and data collection. The questionnaire included a patient information sheet, explaining the nature and purpose of the study, as well as a reminder

that participation was voluntary and responses confidential. The questionnaire took approximately eight minutes to be completed.

Upon receiving approval from MAO, the online questionnaire was distributed via email by the MAO secretariat to its members. A six-month period was allocated for data collection, between April 2020 and September 2020. To increase the response rate, the questionnaire was also posted on the official MAO Facebook page, and participants were encouraged to share the link with other fellow MAO members via instant text messaging. Two subsequent reminder emails/Facebook posts were sent during that time frame. No incentives were offered to participants.

Data were analysed using Statistical Package for Social Sciences (SPSS) software version 26.0 (SPSS Inc., IBM, Armonk, NY, USA). Descriptive statistics were used, and frequency tables were generated. Chi-square test and analysis of variance (ANOVA) were used to analyse the effects of age and work sector on item responses. The significance level was set as $p < 0.05$. Data collected from the open-ended question were analysed using thematic analysis.

RESULTS

This study had a 41% response rate ($n = 72$). Demographic data of respondents are shown in Table 1. The majority of respondents were female (76.4%), aged 40–49 years old (40.3%), had been practicing for five years or less (36.1%), and worked in the Malaysian Ministry of Health (MOH) (48.6%). Responses were recorded from all 14 states of Malaysia, but the primary practice of the respondents was highest from Wilayah Persekutuan Kuala Lumpur (28%) and Selangor (24%).

Table 2 shows general internet and social media use. Almost all respondents (95.8%) obtained their internet access through mobiles/smartphones. The majority of

respondents accessed their internet at home (83.3%) and at work (79.2%), and only a few gained accesses to internet through public access (internet cafe) (22.2%). All except one respondent were social media users. The majority of the respondents had been using social media for at least five years and above, with 30.6% of respondents reporting that they had been social media users between 5 to 10 years and 59.7% for 10 years or more.

Respondents were more likely to use social media for personal use compared to using it for professional use within their orthodontic practice (Fig. 1). Facebook was the preferred social media platform with 75% of the respondents using it for personal use and 39% for professional use, followed by YouTube (61% for personal use and 28% for orthodontic practice) and Google+ (47% for personal use and 29% for orthodontic practice). Twitter and LinkedIn were less frequently used by the respondents, either for personal use (7% for Twitter, 3% for LinkedIn) or for professional use (3% for Twitter, 4% for LinkedIn).

Table 3 shows the respondents used a variety of marketing strategies for their orthodontic practice. Almost half did not believe that dentists or dental specialists should advertise or promote their practices and services (47.2%), with the majority stating that they relied on good service and dental practice image (94.4%), word of mouth marketing (94.4%) and referrals (93.1%). This was followed by marketing via their dental practice webpage (59.7%) and social media (44.4%). Only 29.2% outsourced their marketing needs. The differences in marketing strategies between age groups and working sector were non-significant. However, respondents aged 60 years and above, and those either working for the Ministry of Defence (MinDef) or the Ministry of Higher Education (MOHE), were more likely to be against self-promoting and less likely to rely on social media.

Table 1 Demographic data of respondents

Demographic data	*n*	%
Sex		
Male	17	23.6
Female	55	76.4
Age (years old)		
< 30	0	0.0
30–39	28	38.9
40–49	29	40.3
50–59	10	13.9
> 60	5	6.9
Years of practice		
0–5	26	36.1
6–10	15	20.8
11–20	18	25.0
> 20	13	18.1
Service sector		
Private sector	17	23.6
Ministry of Health	35	48.6
Ministry of Higher Education	15	20.8
Ministry of Defence	5	6.9

Table 2 Information on general internet and social media use

Internet and social media use	*n*	%
Location of internet access‡		
At home	60	83.3
On mobile/smartphone	69	95.8
At work	57	79.2
Public access (internet cafe)	16	22.2
Duration of social media use		
Never	1	1.4
< 2 years	1	1.4
2–5 years	5	6.9
> 5 years < 10 years	22	30.6
≥ 10 years	43	59.7

Note: ‡Multiple answers were allowed for this question.

In terms of social media marketing, less than 10% of respondents were using it, although 87.5% predict its use in orthodontics will increase in the future (Table 4). Out of the 65 respondents who were not using social media as a marketing tool, 38.9% had no future plans to implement it while 23.6% planned to use it in the future and 27.8% indicated that they were unsure and needed more information.

Table 3 Marketing strategies in orthodontics based on age group and working sector

Item	Age group (years old) Agree, n (%)						Working sector Agree, n (%)					
	30–39	40–49	50–59	>60	Total	p-value	Private	MOH	MOHE	MinDef	Total	p-value
I rely on good service and dental practice image	28 (100.0)	27 (93.1)	8 (80.0)	5 (100.0)	68 (94.4)	0.111	16 (94.1)	32 (91.4)	15 (100.0)	5 (100.0)	68 (94.4)	0.618
I rely on word-of-mouth marketing from patients	27 (96.4)	27 (93.1)	9 (90.0)	5 (100.0)	68 (94.4)	0.806	16 (94.1)	32 (91.4)	15 (100.0)	5 (100.0)	68 (94.4)	0.618
I rely on referrals	27 (96.4)	26 (89.7)	10 (100.0)	4 (80.0)	67 (93.1)	0.380	16 (94.1)	32 (91.4)	14 (93.3)	5 (100.0)	67 (93.1)	0.908
I rely on my dental practice webpage	19 (67.9)	16 (55.2)	5 (50.0)	3 (60.0)	43 (59.7)	0.702	11 (64.7)	20 (57.1)	9 (60.0)	3 (60.0)	43 (59.7)	0.965
I do NOT believe dentists/dental specialists should advertise/promote their practices/services	13 (46.4)	12 (41.4)	5 (50.0)	4 (80.0)	34 (47.2)	0.459	8 (47.1)	13 (37.1)	9 (60.0)	4 (80.0)	34 (47.2)	0.207
I rely on social media marketing	15 (53.6)	12 (41.4)	4 (40.0)	1 (20.0)	32 (44.4)	0.504	7 (41.2)	19 (54.3)	5 (33.3)	1 (20.0)	32 (44.4)	0.333
I outsource my marketing needs	8 (28.6)	11 (37.9)	1 (10.0)	1 (20.0)	21 (29.2)	0.382	5 (29.4)	12 (34.3)	3 (20.0)	1 (20.0)	21 (29.2)	0.739

Notes : The mean difference is significant at the 0.05 level, Chi-square test.
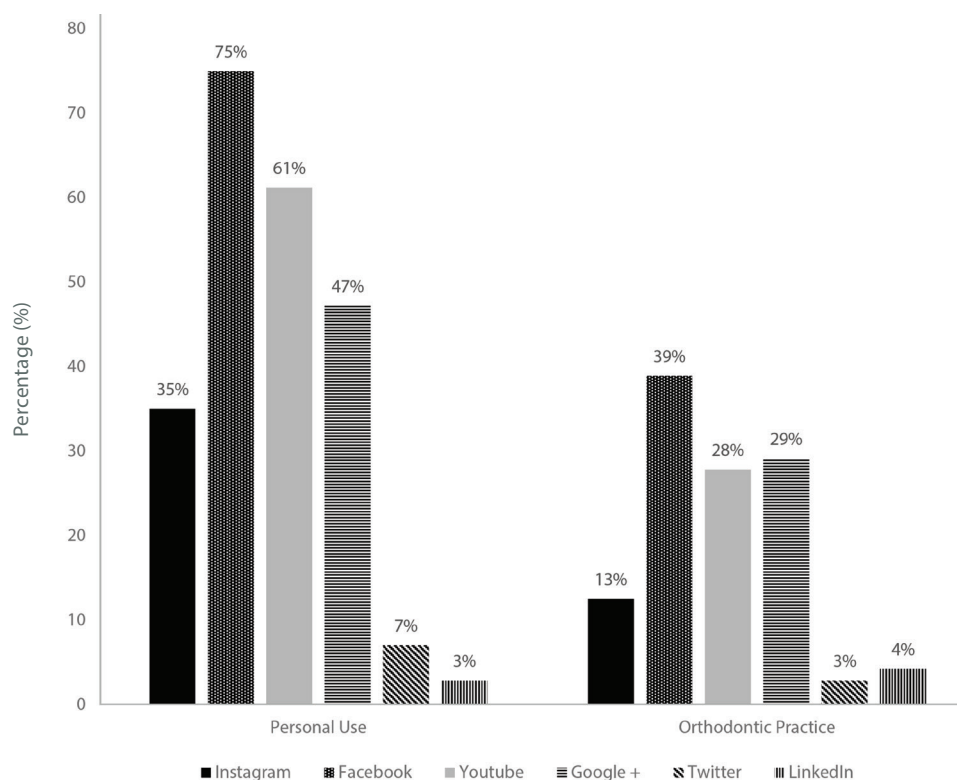
Fig. 1 Most commonly used social media platforms for personal or professional use.

Table 4 Social media marketing in orthodontics

Social media marketing in orthodontics	n	%
Do you predict social media as a marketing tool in orthodontics will increase in the future?		
Yes	63	87.5
No	1	1.4
Not sure	8	11.1
The current situation regarding the use of social media as a marketing tool for your orthodontic practice		
I am using social media as a marketing tool for my orthodontic practice	7	9.7
I do not use social media as a marketing tool yet but plan to implement it	17	23.6
I do not use social media as a marketing tool and have no plans to implement it	28	38.9
I need more information and not sure right now	20	27.8

Table 5 shows the mean scores for reasons that discourage the use of social media as an orthodontic marketing and promotional tool based on age group and working sector. The three main concerns were patient confidentiality, risk of breaching online professional behaviour, and security concerns. There was a statistically significant difference between age groups for knowledge on social media marketing (F[3,68] = 3.366, p = 0.024). Respondents aged 50 years and above were more likely to be unsure of how to conduct social media marketing. The Bonferroni comparisons, however, were not significant, and therefore confident conclusion of which group was significantly different could not be drawn. There was a statistically significant difference between work sector groups for patient confidentiality (F[3,68] = 3.674,

Table 5 Reasons that discourage using social media as an orthodontic marketing and promotion tool based on age and working sector

Item	Mean (SD) based on age groups (years old)				Total mean (SD)	p-value	Mean (SD) based on working sector				Total mean (SD)	p-value
	30–39	40–49	50–59	>60			Private	MOH	MOHE	MinDef		
I do not have time	2.75 (0.84)	2.76 (0.69)	2.80 (0.79)	2.40 (1.14)	2.74 (0.79)	0.806	2.71 (0.69)	2.71 (0.75)	2.93 (0.96)	2.40 (0.89)	2.74 (0.79)	0.601
I have security concerns	3.18 (0.61)	2.83 (0.89)	3.00 (0.47)	3.00 (0.71)	3.00 (0.73)	0.356	2.76 (0.75)	3.11 (0.68)	3.00 (0.85)	3.00 (0.71)	3.00 (0.73)	0.463
I do not see the potential	1.89 (0.69)	1.97 (0.50)	2.20 (0.92)	2.20 (0.45)	1.99 (0.64)	0.520	2.18 (0.64)	1.86 (0.60)	2.07 (0.70)	2.00 (0.71)	1.99 (0.64)	0.371
I do not know how to do marketing on social media	2.36 (0.83)	2.41 (0.73)	3.00 (0.67)	3.20 (0.45)	2.53 (0.79)	0.024*	2.76 (0.56)	2.54 (0.78)	2.47 (0.92)	1.80 (0.84)	2.53 (0.79)	0.113
I do not believe in marketing and promotion of my dental practice	2.32 (0.95)	2.28 (0.80)	2.30 (0.68)	2.40 (0.55)	2.31 (0.82)	0.990	2.41 (0.62)	2.26 (0.92)	2.27 (0.80)	2.40 (0.89)	2.31 (0.82)	0.920
I worry about breaching online professional behaviour	3.07 (0.66)	3.21 (0.62)	3.30 (0.68)	3.20 (1.10)	3.17 (0.67)	0.791	3.12 (0.70)	2.97[†] (0.66)	3.60[†] (0.51)	3.40 (0.55)	3.17 (0.67)	0.016*
I am unclear on the boundaries of online professional behaviour	2.96 (0.74)	2.90 (0.67)	2.80 (0.63)	3.00 (0.71)	2.92 (0.69)	0.913	3.00 (0.61)	2.91 (0.70)	3.07 (0.70)	2.20 (0.45)	2.92 (0.69)	0.090
I am concerned about patient confidentiality	3.25 (0.80)	3.38 (0.62)	3.20 (0.63)	3.00 (0.71)	3.28 (0.70)	0.673	3.06[†] (0.56)	3.17[†] (0.79)	3.73[†] (0.46)	3.40 (0.55)	3.28 (0.70)	0.025*

Notes: * The mean difference is significant at the 0.05 level, one-way ANOVA; [†] Bonferroni post hoc test significant difference at the 0.05 level.

$p = 0.016$) and the risk of breaching online professional behaviour (F[3,68] = 3.318, $p = 0.025$). Bonferroni comparisons revealed MOHE respondents had greater concern for patient confidentiality compared to MOH, $p = 0.013$. Regarding concern on breaching online professional behaviour, MOHE respondents were significantly higher compared to MOH, $p = 0.047$, and the private sector, $p = 0.033$.

All respondents that were using social media for orthodontic marketing had been using it for more than a year and updated their social media at least once a month (Table 6). The main types of posts on social media were services provided (100%), followed by explanations of products and clinical procedures (85.7%) and educational posts on orthodontic treatment (71.4%). A few respondents posted about pre- and post-treatment photos of treatment outcomes, photos of clinic facilities and pictures of staff/orthodontists. The social media marketing programme was usually run by the office manager (57.1%), the respondent themselves (42.9%), or other dentists/dental specialists (42.9%). The majority of respondents indicated that they would not discontinue any other forms of promotion (71.4%). Most (85.7%) claimed to have gained patients through social media marketing while 14.3% were not sure about it. Despite the comparatively few respondents implementing social media marketing, all agreed to the statement saying they would recommend social media marketing to their colleagues, with 57.1% strongly agreeing to the statement.

Responses from the open-ended question regarding comments and opinions on social media marketing generated five main themes: code of professional conduct, uncontrolled online environment, patient education, positive social media marketing and the need for clear national guidelines (Table 7). Respondents were mainly concerned about breaching the professional code of conduct, citing ethical and privacy issues especially concerning patient confidentiality. Some were concerned about the uncontrolled online environment where information is unfiltered, opening the gates for misleading or false information being conveyed to the public. Some felt this could also potentially lead to bad publicity or defamation. Nevertheless, many expressed positive attitudes towards social media marketing with comments such as "I think it's the future, and we should embrace it with an open mind" and "It is the trend nowadays and most people use social media as their searching tool. Easy and fast way of promotion". Many also expressed the potential for social media as an educational tool for the public. Hence, many highlighted the importance of clearer national guidelines on social media conduct.

DISCUSSION

Malaysia has one of the highest mobile internet penetrations in Asia owing to its improved 4G mobile network coverage throughout the country since 2016 (Müller, 2021a). This no doubt has contributed to the 24% increase in social media users in Malaysia over the last five years. As of January 2021, as many as 86% of the Malaysian population were active social media users (Müller, 2021b). Typically, Malaysians spend on average 3.01 hours a day on social media, with Facebook and Instagram being their preferred social media platforms (Müller, 2021a). It is estimated that by the year 2023, there will be 24 million Facebook users in Malaysia (Müller, 2021b). Similarly, in this study, all but one was social media users and Facebook was the preferred social media platform for both personal and professional use. Its popularity may be due to the fact that Facebook was one of the earlier social networking sites, launching back in 2004.

The adoption of social media within the dental practice differs in various parts of the world. For instance, America and Saudi Arabia have shown a high adoption rate with more than half of its dentists reporting to

Table 6 Social media marketing strategies (only for those who use it [*n* = 7])

Social media marketing strategies	*n*	%
Duration of using social media for orthodontic marketing		
< 1 year	0	0.0
1–2 years	2	28.6
> 2 years	5	71.4
Frequency of updating social media for marketing		
At least once a day	0	0.0
At least once a week	0	0.0
At least once a month	7	100.0
Not at all	0	0.0
Types of posts on social media‡		
Pre- and post-treatment photos of treatment outcome	3	42.9
Photos of clinic facilities	4	57.1
Educational posts on orthodontic treatment	5	71.4
Pictures of staff/orthodontists	4	57.1
Updates about office	2	28.6
Involvement in charitable programmes	1	14.3
Involvement in community services	1	14.3
Contests for patients/followers	0	0.0
Explaining products and procedures	6	85.7
Services provided	7	100.0
Person responsible to run social media marketing programmes‡		
Yourself	3	42.9
Other dentists/dental specialists	3	42.9
Dental surgery assistant	1	14.3
Receptionist	1	14.3
Office manager	4	57.1
External marketing service	0	0.0
Spouse/family member	0	0.0
Discontinued any other forms or promotion		
No	5	71.4
Plan to in the future	0	0.0
Yes	2	28.6
Patient gain via social media		
Yes	6	85.7
No	0	0.0
Not sure	1	14.3
Would recommend social media marketing to colleagues		
Strongly disagree	0	0.0
Disagree	0	0.0
Agree	3	42.9
Strongly agree	4	57.1

Note: ‡Multiple answers are allowed for this question.

Table 7 Thematic analysis of respondent feedback regarding social media marketing of the orthodontic practice

Theme	Quotes
Code of professional conduct	Breach of patient confidentiality, may lead to potential ethical misconduct, and intentional/ unintentional commercial benefits. Professional ethics need to be abided by at all times e.g. patient privacy, undercutting promotions. It's a grey area between good advertising and breach of confidentiality of patients.
Uncontrolled online environment	It should not be allowed as it may cause confusion to the patients due to unverified information. False credentials, false information by unqualified clinicians and over-marketing have been observed. Social media has no control over any over-claim. Malicious negative comments may impact the practice.
Patient education	However, I have relatives believing non-evidence-based treatments by social influencers. I don't think professionalism should take a back seat to monetary gain. New platform to create awareness. For academic purpose such as important public information and evidence-based dentistry. In this way we can convey a lot of useful and correct information about the orthodontic treatment.
Positive social media marketing	I have seen it work very well when properly done by professional marketing people. It is the trend nowadays and most people use social media as their searching tools, easy and fast way of promotion. I think it's the future, and we should embrace it with an open mind. The social media is an effective communication tool reaching a truly wide distribution of the society. We, orthodontists, should be using it to build, develop and sustain our orthodontic practice. Media social is good for private or locum orthodontist to marketing their orthodontic practise. The use of social media is the current trend of marketing, and it will increase further in future. Marketing tools will be helpful in attracting patients.
The need for clear national guidelines	Our Malaysian Dental Council should come out fast with a very clear decision on this aspect as a guide to all dental practitioners (general or specialist). It is a very good tool for marketing provided clear guidelines on professional ethics are stipulated by the Dental Act.

use social media within the dental practice for various reasons including marketing, communication and education (Henry *et al.*, 2012; Hamasha *et al.*, 2019). In contrast, only 13.2% of dentists in South Africa and 20% of Malaysian dentists use social media for marketing (Snyman & Visser, 2014; Affendi *et al.*, 2020). This study which focuses on orthodontists, showed a much lower use of social media marketing, with only 9.7%. Interestingly, one-third of our respondents did not believe in marketing or promoting their orthodontic practice. Many still relied on practice image, word of mouth and referrals. Similarly, general practitioners in Saudi Arabia were more likely to engage in social media marketing compared to specialists. This may highlight the competitive world of general practice where current clinicians feel compelled to engage in social media marketing to survive the saturated market due to the over-supply of graduates and uneven geographical distribution of dentists (Simplício, 2019; Cheng *et al.*, 2020). Nevertheless, one study reported 76% orthodontists in America use social media within their practice, which is much higher than what was reported in this study (Nelson *et al.*, 2015).

One of the biggest concerns of orthodontists regarding social media marketing was ethical issues and concerns over breaching the code of professional conduct. The Code of Professional Conduct (1997) is a set of guidelines released by the Malaysian Dental Council (MDC) to maintain high standards of personal conduct and professional ethics among dental professionals (MDC, 2008). Sharing of patient records and communication online carries a risk of breaching professional conduct on various aspects such as patient consent, maintaining a professional patient-dentist relationship, maintaining the integrity of the profession and upholding the professional image of a colleague. In terms of advertising, the guidelines state that advertising material must be legal, decent, and truthful, and have high regard for professional propriety (MDC, 2008). However, the guidelines leave ample space for interpretation and may not always be easily translated into the online platform, thus leaving many dental professionals confused about acceptable behaviour on social media. In Malaysia, there are currently no specific guidelines on social media conduct amongst dental professionals. In the United Kingdom, several dental professionals have been found guilty of social media fitness to practice infringement which mainly involves inappropriate Facebook postings, leading to suspension or reprimand (Neville, 2017). The General Dental Council (GDC) has since introduced guidelines specific to online conduct and the Australian Health Practitioner Regulation Agency (AHPRA) has produced policies that relate to using social media (Dental Board of Australia, 2019). This shows that many countries are beginning to realise the need for specific guidelines for professional social media use among dental professionals. Despite this, a recent study surveying dental clinic websites and social media pages in the United Kingdom revealed only seven websites (1.7%) were fully compliant with the GDC advertising guideline whereas none of the social media pages were compliant (Donnell et al., 2021). In contrast, the American Dental Association amended its code of conduct in 1979 to remove advertising restrictions as such restraints were deemed suppression of free speech under the First Amendment of the Constitution (Edwards et al., 2008). This no doubt has contributed to the high adoption rate of social media marketing in America.

Despite the various pitfalls of social media marketing, its use is anticipated to rise in tandem with the increase seen in social media users which are projected to surpass four billion users worldwide by 2025 (Tankovska, 2021b). This is reflected in this study, where 23.6% of respondents would consider its use in the future, and the majority of respondents predicted social media marketing in orthodontics would increase in the future. Social media enables businesses to engage with customers instead of having a one-way dialogue while maintaining interactivity at a low expense. Even more rewarding is that most social media platforms are free, and the return of investment (ROI) of social media marketing can be higher than traditional methods (Parmar et al., 2018). Nelson et al. (2015) found that practice websites and social media accounts had a significant positive correlation with new patients compared to traditional forms of marketing such as brochures, TV advertisements, or newspaper advertisements. Considering patients highly value recommendations by family and friends, social media encourages online word of mouth, where patients share, like and recommend dental practices on an open platform, thus increasing the visibility of the clinic. Most respondents of this study who were using social media as a marketing tool felt that it had led to patient gain, and they would recommend it to their colleagues. Similarly, a survey among Saudi Arabia dentists showed that more than half acknowledged that using social media as their marketing tool was effective to obtain new patients (Alalawi et al., 2019). Patients have been shown to visit a clinic's social media page prior to receiving treatment, and that the social media page would influence their decision (Cox & Park, 2014). The types

of posts are also important in influencing a patient's decision-making process. For instance, patients perceive a higher quality of care from practices that upload educational posts, as the posts reflect the caring and concerned nature of the clinician (Cox & Park, 2014).

Many respondents of this study felt favourable towards using social media in educating the public as opposed to marketing. The potential of social media in spreading awareness and information on oral health is exceptional due to its high number of users and the ease of sharing and forwarding information. Studies have shown that patients regularly turn to social media to search for health-related information, including potential clinics to seek treatment (Kamarozaman *et al.*, 2020). However, information shared on social media is not regulated and patients are at risk of reading false or misleading information which can be more detrimental to the overall profession. For instance, many consumers have fallen victim to harmful "treatment" offered by fake braces providers or do-it-yourself clear aligners that tend to be advertised on social media (Mohd Nor *et al.*, 2020). Dental professionals can also be guilty of misleading the public through false advertising or overclaiming their services. Dentists should also be wary of voicing out controversial personal opinions that can confuse the public. Although many felt more comfortable in using social media for patient education as opposed to marketing, the authors argue that educational posts can also be seen as a form of marketing or promoting one's services as views and shares of educational posts can generate traffic to social media accounts.

Results from this study must be interpreted with caution as the findings may not reflect the opinion and practice of all orthodontists in Malaysia. It is hoped that the implementation of a national specialist registry within the foreseeable future will allow improved sampling techniques for the generalisability of the findings. It has been found that response rates to online surveys

are considerably lower than on-paper surveys as evident in this study despite employing various methods to boost the response rate (Cook *et al.*, 2000). Nevertheless, the response rate for this study was better than the reported average of 36% for online surveys (Ebert *et al.*, 2018).

CONCLUSION

Orthodontists in Malaysia use social media for both personal and professional use but only a minority have adopted social media for the marketing of their practice. The majority see its potential and predict its use will increase in the future. These findings suggest the need for clear guidelines on social media conduct among dental professionals.

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