

Assessment of Patients' Perception of Orthodontists' Social Media Usage and Its Association with their Professionalism: A Cross-Sectional Study

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ABSTRACT

Aims: This study assessed how social media is being utilized by patients of the Orthodontics Clinic and examined the patients' preferences regarding social media sites. The article also attempts to investigate the potential benefits of social media sites in regard to improving patients' motivation and cooperation, and to examine the patients' views on the extent of orthodontics professionalism.

Materials and Methods: The study is a descriptive cross-sectional survey of 101 patients over 18 years old. The patients were randomly selected and recruited from those attending orthodontic consultations in the Department of Orthopedics. An electronic questionnaire was developed and sent out to all participants, including questions about their socio-demographic characteristics, and other questions intended to obtain some knowledge about their perceptions of Orthodontists' Social Media Usage, and this usage association with orthodontics professionalism. The chi-square test was used to compare different qualitative variables.

Results: The x platform was the preferred tool for exploring patients' thoughts of a skilled orthodontist. Further, the data revealed that 63.4% of the respondents agree that sharing orthodontists' cases on social media is considered part of their professionalism so long as the patient's identity remains anonymous with statistical significance views towards online consultations with orthodontists were generally positive.

Conclusion: Social media has gained a greater impact and an increasingly active role in patients' decisions regarding their selection of healthcare providers. Most orthodontic patients use social media for online consultations and to obtain further information about orthodontic treatment.

Keywords: Dental Professionalism; Orthodontic Practice; Platforms; Social Media

Introduction

Social media is defined as the online tools and practices that enable instant and fast communication amongst individuals, hence allowing them to share their experiences, discuss opinions, and exchange perspectives [1,2]. Due to the pervasiveness, efficiency, and easy use of its applications, social media has become increasingly important in modern daily life, with more than 3.5 billion daily users worldwide [3,4]. Social media platforms such as WhatsApp, Instagram, Snapchat, X, Tik-Tok, and Facebook divert people away from the traditional ways of communication and instead provide them with a variety of efficient educational methods, allowing them to share health information, and exchange patient experiences in a rather fast and efficient way. In addition, dental and medical professionals have increased the use of social media for advertising purposes to further educate their patients, provide them with a variety of products, and enhance the services they provide by constantly receiving their patients' feedback [5,6]. In this regard, Saudi Arabia is no different from the rest of the world, where social media has been flourishing at a faster pace. Based on social media statistics, in 2023, 28.8 million people in Saudi Arabia were using social media, i.e. 79.3% of the total population [7]. As a result, social media sites have had a significant impact in promoting dental services in general, and orthodontic practices in particular [3,8]. Nowadays, most patients seeking orthodontic treatment use social media platforms to obtain information they believe can assist them in determining which orthodontist has extensive experience and the best orthodontic treatment outcomes [9,10]. An excellent online reputation is crucial for most orthodontic practices [2,11]. Furthermore, many researchers reported the importance of social media usage, emphasizing that dental practices need a robust online presence in order to thrive [2,12]. With the wide availability, usage, and potential influence of social media in the fields of dentistry, especially in Orthodontics, the lack of thorough research on this topic provided the stimulus for this paper and, hence, the purpose of this study is to assess the extent to which patients at orthodontics clinic are utilizing social media, examine their preferences towards social media sites and apps, and to investigate the potential benefits of social media platforms in improving patient motivation and co-operation, and to assess its impact on the professionalism of orthodontists from patients' point of view.

Materials and Methods

Study Design and Sample

This cross-sectional study surveyed 101 patients over 18 years old who were chosen by using simple random sampling while attending orthodontic consultation at the Department of Orthodontics, College of Dentistry, King Saud University, Riyadh, Saudi Arabia, between August and November 2023. Ethical approval was obtained by the Institutional Review Board (IRB) at the College of Dentistry,

King Saud University [E-23-7670]. The study's aims were thoroughly explained to all participants, and detailed written informed consent forms were obtained from all participating patients. The study participants were invited to participate voluntarily and given a QR code that redirected them to a questionnaire created using Google Forms.

Study Protocol

The electronic questionnaire comprised of 14 multiple-choice questions. The first part consisted of 2 questions related to the participant's demographic information. The second part consisted of 3 questions to assess the most popular social media platform used by patients in general, the preferred social media platform used to search for an Orthodontist, and the period during which patients use social media the most. Finally, the third part is composed of 9 questions, which attempt to elucidate patients' opinions towards social media usage by Orthodontists, the role of social media in the formation of patients' perception of Orthodontists' professionalism, their aptness of posting patients' personal information on social media as part of their regular clinical practice, without necessarily obtaining patients' consent. These question attempts to illuminate the patients' preferences regarding an online Orthodontist consultation, and their beliefs on a few other issues, such as whether social media would affect their selection of an Orthodontist, the future usage of social media in Orthodontics, and whether Orthodontists should use social media platforms as marketing and educational tools. The final question assesses the information the patients seek when browsing an Orthodontist's social media account. A sample calculation was performed using G Power software to define the number of individuals targeted to participate in the research. A pilot study of 20 randomly selected patients was conducted to check for the validation of the questionnaire (alpha reliability coefficient of 0.75). Therefore, minor changes were made for better understanding, and a second administration of the questionnaires was performed. A confidence level was set at 95%, and a power level of 80% was set with a moderate effect size with a final sample size of 100 patients. However, a larger sample was recruited to avoid a low response rate, which may affect the sample size. The inclusion criteria consisted of patients who were being treated in the Orthodontic clinics at King Saud University (KSU), Riyadh, Saudi Arabia.

Statistical Analysis

The collected data was coded and analyzed using SPSS software version 20.0.0 (IBM Corporation, Armonk, NY, USA). Descriptive statistics were calculated, and Data analysis was undertaken by using Pearson's Chi-square test to compare demographic data, and the dependent variables among groups. In addition, Multiple group comparisons were conducted using Tukey's post-hoc test. The P value ≤ 0.05 level of significance was chosen. The data collection and analysis method complied with the terms and conditions for the data source.

Results

A total of 101 patients aged over 18 years old participated in this study. The participants consisted of 13 Males and 88 Females, with a response rate of 76%. The age distribution was nearly even, with 49.5% being 25 or younger and 50.5% being older than 25. Snapchat

was the social media platform that the participants used the most (39.6%), followed by X (formerly known as Twitter), which was the preferred platform to search for a skilled orthodontist (59.4%). Most participants used social media primarily at night (84.2%) for more than 3 hours a day. The demographic characteristics of the participants are presented in Table 1.

Table 1: Socio-demographic characteristics of the participants.

Variable		n	%
Gender	Male	13	12.9
	Female	88	87.1
Age	<= 25	50	49.5
	> 25	51	50.5
preferred social media platform	Instagram	24	23.8
	X	18	17.8
	TikTok	19	18.8
	snapchat	40	39.6
preferred platform to search for a skilled orthodontist	Instagram	29	28.7
	X	60	59.4
	Other	12	11.9
At what time of the day do you use social media the most?	Day	16	15.8
	Night	85	84.2

Regarding the issue of reliability of an orthodontist who shares cases on social media, opinions were divided into 26.7% agreed that such an orthodontist would be seen as more reliable, 25.7% disagreed, and the majority held a neutral stance (47.5%) with no statistical difference seen when their responses were compared (p-value = 0.805). Regarding the issue of professionalism, most participants disagreed with the statement that an orthodontist who shares his cases on social media is unprofessional (63.4%); however, 10.9% agreed, and 25.7% were neutral. A Pearson Chi-square test showed a significant association between the variables, with a p-value of 0.000, indicating

that sharing orthodontists' cases on social media does not negatively affect the level of their professionalism (Table 2). The issue of patient consent and anonymity was also explored. A significant majority disagreed with the statement that it's appropriate for orthodontists to share patient information on social media without their consent, even if the patient's identity remains anonymous (80.2%). On the other hand, when consent is given, the majority of participants deemed it appropriate for an orthodontist to share patient information on social media so long as the patient's identity remains anonymous (83.2%). Only a few participants disagreed (8.9%) or were neutral (7.9%).

Table 2: Participants' opinions regarding the reliability and professionalism of an orthodontist who shares cases on social media.

Variable	agree	%	neutral	%	disagree	%	chi sq	df	p=value
An orthodontist who shares his cases on social media platforms is more reliable than the one who does not	27	26.7%	48	47.5%	26	25.7%	0.018	1	0.805
An orthodontist who uses social media to share his cases is unprofessional	11	10.9%	26	25.7%	64	63.4%	16.264 a	2	0.000

The cross-tabulation data, as shown in Table 3, explores the relationship between participants' attitudes towards the aptness of orthodontists sharing patient information on social media without consent and with consent, provided that the patient's identity remains anonymous. Among participants who disagreed that it's appropriate for orthodontists to share patient information without consent, 8.6% also disagreed that it's appropriate with consent, 8.6% remained neutral, and a large majority (82.7%) considered it is appropriate to share

their information after obtaining their consent. The distribution was similar among those who were neutral about information sharing without consent: 9.1% disagreed and 9.1% were neutral about sharing with consent, while 81.8% agreed. Among those agreeing to information sharing without consent, 11.1% disagreed and 88.9% agreed it's appropriate to share with consent. A Pearson Chi-square test shows no significant association between participants' views on sharing patient information without consent and their views on

sharing with consent (p-value = 0.902). Participants' views towards online orthodontic consultations were generally positive, with 66.3% disagreeing with the statement that this practice is unprofessional. Almost half of the responses agreed that social media would influence their choice of an orthodontist (48.5%). In addition, participants strongly agreed that social media usage in orthodontics will increase over time (69.3%), and 45.5% believed that orthodontists should increase their utilization of social media tools. As for the type of content they would like to see from orthodontists on social media, the ma-

majority were interested in the orthodontist's background (76.2%) and before-and-after case pictures (74.3%). Furthermore, more than half of the participants were eager to see the clinicians' interactions with their patients (53.5%), and a significant number appreciated the patients' reviews and feedback (71.3%). However, the participants were evenly split on the importance of new techniques and methods in the field (49.5% yes, 50.5% no), and a slight majority did not think general information for patients was necessary (57.4%) (Table 4).

Table 3: Cross-tabulation data represents the relationship between participants' attitudes towards the aptness of orthodontists to share patient information on social media with and without consent.

Variable	It is appropriate for orthodontists to share information on social media about a patient with his/her consent as long as her/his identity remains anonymous.											
	Level	Disagree		Neutral		Agree		Total		Ch_sq	df	P value
		n	%	n	%	n	%	n	%			
It is appropriate for orthodontists to share information on social media about a patient without his/her consent as long as his/her identity remains anonymous	Disagree	7	8.6%	7	8.6%	67	82.7%	81	100.0%	0.015	1	0.902
	Neutral	1	9.1%	1	9.1%	9	81.8%	11	100.0%			
	Agree	1	11.1%	0	0%	8	88.9%	9	100.0%			

Table 4: Patients' opinions towards social media usage by Orthodontists and the information the patients are seeking when browsing an Orthodontist's social media account.

An orthodontist who offers online consultations with his patients is unprofessional	Agree	13	12.9	
	Neutral	21	20.8	
	Disagree	67	66.3	
Social media would affect my selection of an orthodontist	Agree	49	48.5	
	Neutral	24	23.8	
	Disagree	28	27.7	
Social media usage in orthodontics will increase with time	Agree	70	69.3	
	Neutral	26	25.7	
	Disagree	5	5.0	
Orthodontists should increase the utilization of social media	Agree	46	45.5	
	Neutral	30	29.7	
	Disagree	25	24.8	
Kind of information the patients are seeking when browsing an Orthodontist's social media account.	The orthodontist's background.	Yes	77	76.2
		No	24	23.8
	The orthodontist's background.	Yes	75	74.3
		No	26	25.7
	Pictures of cases before and after	Yes	43	42.6
		No	58	57.4
	General information helpful to patients	Yes	50	49.5
		No	51	50.5
	New techniques and methods in the field	Yes	54	53.5
		No	47	46.5
	The patient's reviews and feedback	Yes	72	71.3
		No	29	28.7

The relationship between the kind of social media platform the participants use the most and the platform they would prefer to use to search for a skilled orthodontist is presented in Table 5. Of the Instagram users, 37.5% would prefer to use Instagram to find an orthodontist, 58.3% would choose X, and 4.2% would opt for another platform. All X users (100%) prefer to use X for their orthodontist search. On the other hand, TikTok users were evenly split between

Instagram (36.8%), X (31.6%), and other platforms (31.6%). Among Snapchat users, 32.5% would prefer Instagram, 55% would opt for X, and 12.5% would choose another platform. A Pearson Chi-square test shows a significant association between the variables, with a p-value of 0.001, indicating that the social media platform browsers use the most significantly influences their choice of platform for finding an orthodontist (Table 5).

Table 5: The relationship between the kind of social media platform the participants use the most and the platform they would prefer to use to search for a skilled orthodontist.

Variable		The platform they would prefer to use to search for a skilled orthodontist.								Variable	Variable	Variable
		Instagram		Twitter		Other		Total				
		n	%	n	%	n	%	n	%			
the kind of social media platform the participants use the most	Instagram	9	37.5%	14	58.3%	1	4.2%	24	100.0%	23.614a	6	0.001
	Twitter	0	0.0%	18	100.0%	0	0.0%	18	100.0%			
	TikTok	7	36.8%	6	31.6%	6	31.6%	19	100.0%			
	Snapchat	13	32.5%	22	55%	5	12.5%	40	100.0%			

Table 6 displays the relationship between participants' age and opinions on whether an orthodontist using social media to share cases is unprofessional. Among participants aged 25 years or below, only 2% agreed that an orthodontist's sharing of cases on social media is considered unprofessional. However, 16% were neutral, and a majority (82%) disagreed. For participants over 25 years old, the responses were more evenly distributed and showed that 19.6%

agreed that it was unprofessional, 35.3% were neutral, and 45.1% disagreed with the statement. The Pearson Chi-square test indicates a significant association between the variables (p-value = 0.000). Hence, the data suggests that age significantly influences the perceptions towards orthodontists' professionalism when using social media to share case information.

Table 6: The relationship between participants' age and opinions on whether an orthodontist who uses social media to share cases is unprofessional.

Variable		The orthodontist who uses social media to share cases is unprofessional.								Ch_sq	df	P value
		Agree		Neutral		Disagree		Total				
		n	%	n	%	n	%	n	%			
Age	<= 25 years	1	2%	8	16%	41	82%	50	100.0%	16.264a	2	0.000
	> 25 years	10	19.6%	18	35.3%	23	45.1%	51	100.0%			

Discussion

In modern health care, social media networks have become attractive methods for patients' personal use, as well as for orthodontists as advertisement and communication means [2,13]. The scope of the present study was to assess how patients are utilizing social media and to explore their preferences regarding social media sites and apps. In addition, the study investigated the potential benefits of social media sites in improving patients' motivations and cooperation. It assessed their views on the professionalism of orthodontists using social media platforms. To our knowledge, there is a lack in the orthodontic literature investigating the Patients' Perceptions of Orthodontists' Social Media Usage, and this usage's impact on how patients perceive the orthodontists' Professionalism when advertising

their products or services, and utilizing these apps to communicate with their current and potential patients.

The current research findings indicated that Snapchat was the preferred platform to search for a skilled orthodontist, which is consistent with the study done by Al-Gunaid et al [14]. Comparably, other studies have found that Instagram has grown into a valuable resource for healthcare professionals and patients in recent years [15,16]. An even age distribution was observed between participants in the present study, with almost half being 25 years old or younger. In contrast, Khalifa et al. have found a difference according to age in regard to the most used social media platform, where younger individuals predominantly utilized platforms such as X, WhatsApp, Instagram, YouTube, and Snapchat in comparison to their older counterparts [11].

More than half of the respondents in this study agreed that sharing orthodontists' cases on social media is part of their professionalism. Those results are similar to the findings reported in several studies [9,17]. Various demographics might respond differently to the content shared by orthodontists on social media, specifically in terms of perceptions of professional credibility and the probability of selecting a practitioner for their treatment. Characteristics that signal credibility can enhance the perception of professionalism in social media interactions. Consequently, this improvement in professionalism can contribute to increased trust from patients towards medical professionals [18]. Another study's findings indicated that patients assess dentists' conduct across four categories: proficiency and communication abilities, humanism, dedication, service orientation, competence in practice, and the management skills associated with dentists' responsibilities [19]. Thus, our research has examined patients' perception of professionalism from aspects other than physical appearance in order to fill the gap between what patients deem essential and what has already been studied in previous literature.

The present study also explored the issue of patient consent and anonymity. Most patients have agreed that it's appropriate to share their cases under two conditions: if their consent was obtained and if their identity remained anonymous. Otherwise, it is considered inappropriate. Moreover, Stieber et.al illustrated how unauthorized use of images, such as posting them on a public forum, could potentially violate patient privacy and consent [20]. In the present study, more than half of the participants were positive towards online orthodontic consultations. They considered it a professional practice, so social media would consequently influence their choice of orthodontist. This would further encourage orthodontists to maximize their use of online apps to provide their patients with the necessary consultations. This contradicts the findings of Khalifa et al. [11] research that surveyed dentists found that fewer than half of the participants were inclined toward offering dental consultations through social media. The reluctance of most dentists surveyed to engage in social media consultations might be linked to insufficient information about conducting such consultations or concerns about potential legal repercussions [11].

In addition, our findings indicate that a dentist's reputation and before-and-after images hold greater significance in the decision-making process of selecting an orthodontist, which is consistent with several studies [2,17]. Meira et al. suggested that such posts can positively enhance an orthodontist's professional image [17]. Furthermore, being active on social media as a dentist and engaging with patients appropriately is crucial for communication and attracting new patients [17]. This contributes to the belief that social media usage should be further encouraged to enhance dental, and more specifically, orthodontics' practice, as its usage will continue to grow in the future. This study had some limitations, however. Most importantly, the small sample size, the gender distribution is heavily skewed towards females, and the restrictions in the distribution of

the questionnaire. As a result, further studies are required to use a larger and more balanced sample to enhance the generalizability of the findings and improve sample distribution to include other regions of Saudi Arabia to investigate the potential benefits of social media sites in improving patients' motivation and cooperation, and to assess the patients' views on the extent of orthodontists' professionalism. In addition, a comparison with other disciplines, provide a comparative perspective on the role of including other dental or medical specialties, could social media in healthcare.

Conclusions

This study concluded the following:

- Snapchat was a social network widely used by patients seeking health services and finding a competent and skilled orthodontist.
- More than half of the respondents agreed that sharing orthodontists' cases on social media is part of their professionalism under two conditions: obtaining the patients' consent and keeping their identities anonymous.
- More than half of the participants were positive towards online orthodontic consultations and found it professional practice.
- Dentist's reputation and before-and-after images hold greater significance in the decision-making process of selecting an orthodontist.

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Author's Declaration

The authors declare that the research work in this article is original, and any liability arising from this work shall be their responsibility.

Authors Contributions:

ES: Primary author and Corresponding author, concept designs, data extraction, writing original draft, methodology and resources; NG: data extraction, methodology, resources, conceptualization, validation, data curation, article review, and guarantor; RA: data extraction, methodology, resources, article review and guarantor; SR: data extraction, methodology, resources, article review and guarantor; AR: concept designs, data extraction, writing original draft, methodology, resources, article review and guarantor; AK: concept designs, literature search, statistical analysis, and manuscript review.

Conflicts of Interest

The authors declare no conflicts of interest.

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