

The Impact of Orthodontists' Image-Based Social Media Posts on the Public's Willingness to Seek Treatment in the Central Region of Saudi Arabia

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Background: Social media has transformed communication and information sharing, significantly impacting various fields, including healthcare. This study investigates the influence of orthodontists' social media posts on the Saudi public's willingness to seek orthodontic treatment.

Materials and Methods: A descriptive, cross-sectional online survey was conducted among Saudi adults residing in the central region of Saudi Arabia. The questionnaire comprised three main sections, respectively aiming to capture the respondents' demographic data, social media preferences, and willingness to seek orthodontic treatment (whereby images depicting different themes were rated on a 0–10 scale). ANOVA was used to compare continuous data across multiple groups, while the unpaired *t*-test compared continuous data between two groups. The Pearson chi-squared test assessed frequency differences, with $p \leq 0.05$ considered statistically significant.

Results: Based on the survey involving 1267 Saudis, Snapchat is the most frequently browsed social media platform, followed by TikTok and Twitter. Image themes most likely to increase willingness to seek orthodontic treatment were “Before and After (Intraoral)” and “Before and After (Extraoral)”, with the average scores of 8.06 and 7.83, respectively. In contrast, images of “orthodontic screws” (3.45) and “orthodontic elastics” (3.79) were the least impactful.

Conclusion: The types of images orthodontists share on social media can significantly influence the Saudi public's willingness to seek treatment. By strategically using social media and posting visually appealing content, orthodontists have the potential to enhance public interest and grow their practices effectively.

Keywords: before & after, Instagram®, orthodontics, social media

Introduction

Social media has revolutionized healthcare by enhancing communication between providers and patients, becoming a primary source of health-related information, especially among younger generations.^{1,2} The widespread availability and accessibility of information through platforms like X® (previously known as Twitter®), Instagram®, and YouTube® has also transformed the delivery of healthcare services, enabling dental practices to attract new patients and educate them effectively.³⁻⁶ However, while these tools offer valuable opportunities for communication and patient care, they also present risks, such as the potential spread of misinformation and breaches of patient–dentist confidentiality.⁷

Many factors can influence patients' choice of a dentist—such as age, gender, rank, reputation, clinical setup/color scheme, and dentist's attire—whereby their relative importance varies across populations.⁸⁻¹¹ However, the impact of orthodontists' social media activity on patients' selection of an orthodontist remains insufficiently studied, particularly within the Saudi population.

While limited, the available evidence indicates that social media is useful for orthodontists in building relationships with current and prospective patients, serving as a powerful marketing tool, and delivering educational content.^{4,6,12} However, the type/theme of content posted on social media is even more critical. Based on their research involving a Brazilian sample, Meira et al established that the theme or nature of the social media posts by orthodontists influenced the respondents' willingness to become a patient, indicating that certain social media posts could be off-putting while others are more likely to attract potential orthodontic patients.¹³

Owing to the increasing digitization and social media utilization and consumption in Saudi Arabia, it would be beneficial to examine the impact of the content posted by orthodontists on the potential patients' decision-making process or willingness of the Saudi population in the central region to seek orthodontic treatment, which was the aim of the present study.

Materials and Methods

Prior to commencing this descriptive cross-sectional study, ethical approval was obtained from King Abdullah International Medical Research Center KAIMRC (NRC22R/618/11). The study was conducted in accordance with the Declaration of Helsinki, with informed consent gathered from all participants. Those who agreed to have their images used in the survey also provided specific consent for their images to be included in the questionnaire and any resulting publications.

The target population for the online survey — as the main data collection method for this study — were Saudi adults (aged 18 years and above) irrespective of their socioeconomic or educational level. A non-probability convenience sampling method was thus used to recruit the participants. The minimum sample size ($N = 451$) was estimated using a descriptive study formula $N = 4pq / L^2$ where q denotes the prevalence of laypeople using social media to research health services ($q = 100 - p$, $L = 0.1p$). Based on the findings reported by Meira et al, we assumed that about 47% of laypeople in Saudi Arabia used social media to research health services.¹³

A digital self-administered questionnaire [Supplement 1] was developed using Google Forms in the Arabic language. The validated English questionnaire was translated into Arabic and was subsequently back-translated by an independent translator to ensure accuracy and equivalence. The questionnaire had three main sections: demographic data, general questions related to social media preferences and predilections, and image-based questions that required a response on a 0–10 scale. The image-based section included 11 themes/categories,¹³ each represented by a single image provided from a public access source or created by the research team with consent. Image selection was carried out by three researchers—two dental students and an orthodontist—after reviewing the social media profiles of the top five followed local orthodontists. In cases of disagreement regarding image categorization, a fourth researcher was consulted to help reach a consensus. The questionnaire was distributed exclusively via WhatsApp using a snowball sampling method and remained available for 30 days, accessible through a computer, smartphone, or tablet.

Lawshe's Content Validity formula¹⁴ was employed to estimate the content validity ratio, whereas the Intraclass Correlation Coefficient (ICC) and Kappa statistics were calculated to assess the test–retest performance of continuous and categorical variables, respectively on 30 participants one week apart.

All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) 23.0 software package (Chicago, IL, USA). Descriptive statistics were reported for all study variables. The ANOVA test was employed to compare the continuous data between more than two groups, while the unpaired t -test was performed to compare the continuous data between two groups. Pearson chi-squared test was conducted to compare the frequencies across groups, whereby $p \leq 0.05$ was considered statistically significant.

Results

Validity and Reliability

Based on the overall Content Validity Index,¹⁴ the questionnaire was relevant (0.85) and clear (0.75). ICC scores showed moderate to excellent reliability (0.567–0.955), and the Kappa agreement was moderate to almost perfect (0.516–0.918). The results yielded by the ICC and Kappa tests for all variables were statistically significant ($p \leq 0.05$).

Demographic Data

The online survey was completed by 1267 individuals, nearly 70% of whom were female. About 21%, 22.4%, and 30.3% of the sample were aged ≤ 20 years, 31 to 40 years, and 21 to 30 years, respectively. More than half of the participants had a bachelor's degree and about 12.7% had a postgraduate degree [Table 1].

General Questions

The most browsed social media platform was Snapchat, followed by TikTok and Twitter [Table 2]. TikTok was the most frequently browsed platform in the <20 and 21–30 age groups. However, those aged 31–40 and 41–50 favored Snapchat, while individuals aged >51 years mostly used Twitter. Further analyses revealed that the proportion of participants using social media platforms for > 6 hours per day decreased with age [Supplement 1].

Half of the participants browsed social media for 2–4 hours daily, and only 14% of the sample spent more than 6 hours per day on social media. About 50% of respondents stated that they would search social media for orthodontists

Table 1 Demographic Data of the Study Participants

		N (%)
Gender	Female	883 (69.7)
	Male	384 (30.3)
Age	≤ 20 years	265 (20.9)
	21 to 30 years	388 (30.6)
	31 to 40 years	284 (22.4)
	41 to 50 years	210 (16.6)
	≥ 51 years	120 (9.5)
Educational level	Primary school	6 (0.5)
	Middle school	30 (2.4)
	High school	289 (22.8)
	Diploma	99 (7.8)
	Bachelor's degree	682 (53.8)
	Postgraduate degree	161 (12.7)

Table 2 Descriptive Statistics of Responses to General Questions

General Questions		N (%)
Which social media platform do you most often browse? (One option only)	Snapchat	376 (29.7)
	TikTok	344 (27.2)
	Twitter	267 (21.1)
	Instagram	208 (16.4)
	None	59 (4.7)
	LinkedIn	10 (0.8)
	Facebook	3 (0.2)
How many hours per day do you browse social media?	< 1 hour	167 (13.2)
	2–4 hours	642 (50.7)
	5–6 hours	285 (22.5)
	> 6 hours	173 (13.7)
If you are seeking orthodontic treatment, would you search on social media to find the orthodontist you are going to?	No	642 (50.7)
	Yes	625 (49.3)

(Continued)

Table 2 (Continued).

General Questions		N (%)
Would you follow an orthodontist on your social media platforms?	No	511 (40.3)
	Yes	756 (59.7)
Does the number of the orthodontist's followers on social media influence your decision to become their patient?	No	329 (26.0)
	Sometimes	701 (55.3)
	Yes	237 (18.7)
Regarding the frequency of posting on social media, which of the following is more likely to encourage you to seek orthodontic treatment from an orthodontist? If the orthodontist is posting...	Daily	226 (17.8)
	Once a week	403 (31.8)
	Once a month	73 (5.8)
	Indifferent	565 (44.6)

to seek orthodontic treatment, and about 60% agreed that they would follow an orthodontist on social media platforms. Nearly 74% of the participants agreed (choosing yes/sometimes responses) that the number of the orthodontist's followers on social media influenced their decision to become their patient. Most participants (44.6%) stated that they were indifferent to the frequency of posting by an orthodontist on social media. However, 17.8% and 31.8% preferred orthodontists that posted on social media once a week and once a month, respectively [Table 2].

Image-Based Questions

The survey participants rated eleven images on a 0–10 scale, indicating the significance of the image theme to their willingness to seek treatment from the orthodontist that has posted the content. The most favorably impactful photographs were “Before and After (Intraoral)” (8.06) and “Before and After (Extraoral)” (7.83), while images of orthodontic screws (3.45) and orthodontic elastics (3.79) were the least popular. Female participants had statistically significantly higher scores than male participants for the following image categories: “participating in scientific events”, “being a teacher”, and “before and after (intraoral)” [Table 3].

Table 3 Mean “Willingness for Treatment” Scores for All Image-Related Questions

	Mean (SD)	Gender	Mean (SD)	P value
Orthodontic elastics	3.79 (3.41)	Male	3.84 (3.45)	0.735
		Female	3.77 (3.40)	
Metallic bracket	4.92 (3.54)	Male	4.81 (3.47)	0.468
		Female	4.96 (3.58)	
Clear aligners	6.72 (3.33)	Male	6.71 (3.38)	0.99
		Female	6.72 (3.30)	
Personal/Social life	4.51 (3.47)	Male	4.51 (3.47)	0.989
		Female	4.51 (3.47)	
Doctor–patient relationship	6.77 (3.10)	Male	6.58 (2.98)	0.154
		Female	6.85 (3.15)	
Orthodontic screws	3.45 (3.38)	Male	3.65 (3.29)	0.163
		Female	3.36 (3.42)	

(Continued)

Table 3 (Continued).

	Mean (SD)	Gender	Mean (SD)	P value
Participating in scientific events	6.09 (3.16)	Male Female	5.67 (3.16) 6.27 (3.14)	0.002*
Being a teacher	6.52 (3.08)	Male Female	5.99 (3.15) 6.76 (3.02)	0.001*
Before & After (intraoral)	8.06 (2.73)	Male Female	7.54 (2.92) 8.29 (2.60)	0.001*
Educational post	6.11 (3.15)	Male Female	5.92 (3.07) 6.20 (3.18)	0.153
Before & After (extraoral)	7.83 (2.64)	Male Female	7.67 (2.63) 7.89 (2.64)	0.176

Notes: Unpaired t-test, *Statistical significance at $p \leq 0.05$.

Discussion

The presented study investigated the influence of orthodontic social media posts on the Saudi public's willingness to choose their orthodontist. We found that certain themes of social media posts increased the likelihood of an individual to seek orthodontic treatment, while others could have the opposite effect.

Most dental professionals in Saudi Arabia believe that social media plays a critical role in patients' choice of dentist.^{7,15,16} However, the general public in Saudi Arabia considers social media to be one of the least critical factors when selecting a dentist, instead prioritizing the dentist's qualifications, location, cost, and reputation.^{8,17} Nonetheless, most of the public still would search on social media to aid them in choosing their orthodontist.¹⁸ Thus, it is not surprising that social media utilization has become one of the most common marketing strategies employed by the dental healthcare providers.^{16,19}

Snapchat was the most commonly browsed social media platform among our sample of the Saudi population, a finding that has been consistent over the past five years.^{17,18} Interestingly, we found TikTok to be the second most commonly browsed social media platform, which is a testament to its recent rapid spread in our younger community, potentially in favor of Instagram.^{17,18}

When it comes to the type of content posted by orthodontists on their social media accounts, two themes/categories — “Before & After (intraoral)” and “Before & After (extraoral)” — stood out as the most likely to increase the Saudi public's willingness to seek orthodontic treatment. Similar findings were reported by Meira et al based on a survey of Brazilian community.¹³ The result for laypeople in our study and in the Brazilian community¹³ could be attributed to the fact that the general public prefers to see the final results instantaneously rather than the phases or the mechanics of the orthodontic treatment.

Other positively perceived categories, scoring above 5/10, included “Clear aligners”, “Being a teacher”, “Doctor-patient relationship”, “Participating in scientific events”, and “Educational posts”. These findings suggest that shifting away from posts about visible braces and complex orthodontic treatment mechanics may increase the Saudi public's willingness to pursue orthodontic treatment. However, content unrelated to clinical practice, such as the “Personal/social life” of orthodontists, was viewed less favorably, scoring below 5/10 on the willingness scale.

The negatively perceived categories that scored less than 5/10 on the willingness scale were “Orthodontic screws”, “Orthodontic elastics”, and “Metallic brackets”. These categories are more related to orthodontic mechanics and techniques that the Saudi public did not look at favorably. However, such content may still be appealing for orthodontic professionals and students.¹³ These positive and negative perceptions or emotions towards various social media posts have been studied among active orthodontic patients,^{20,21} posts related to braces removal were often associated with positive emotions, such as happiness, joy, and excitement. In contrast, posts about receiving braces tended to evoke more negative feelings.

This study has several limitations that should be considered when interpreting the reported findings. First, the cross-sectional self-report survey design inherently limits the ability to establish causality and may introduce response biases. Additionally, the survey was predominantly distributed in the central region of Saudi Arabia with mainly female participants, which may limit the generalizability of the obtained results to other regions. Moreover, the sole focus on images as a measure of social media activity precludes the assessment of the perceived value of other social media content (eg, short and long videos, live interaction with the audience, Q/A engagements, etc) in attracting patients. Finally, as only the public's perception was examined, the perspectives of other populations targeted by social media, such as dental professionals, who may have different perceptions of various post themes, were not considered.

Authors of future studies in this field could address these shortcomings as well as expand the critical assessments of the influence of various forms of social media utilization (beyond just images) by healthcare providers, including orthodontists.

Conclusion

The types of images posted on social media by orthodontists might positively or negatively influence the Saudi public's willingness to seek orthodontic treatment. The themes that most likely encourage an individual to seek orthodontic treatment were "Before and After (Intraoral)" and "Before and After (Extraoral)". On the contrary, the least likely to encourage someone to seek orthodontic treatment were "orthodontic screws" and "orthodontic elastics". By using social media effectively and creating more appealing content for the public, orthodontists can potentially expand their reach and practice.

Data Sharing Statement

The datasets used during the study are available from the corresponding author (Bassam Alalola) upon reasonable request.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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