


## Original article

# Social media marketing of orthodontic treatment from patients' perspective: a cross-sectional study

Yunus Emre Birol <sup>1</sup>, Hülya Kılıçoğlu <sup>2</sup>Hande Uzunçubuk <sup>3\*</sup><sup>1</sup> Private Practice, Istanbul, Türkiye<sup>2</sup> Department of Orthodontics, Faculty of Dentistry, Istanbul University, Istanbul, Türkiye<sup>3</sup> Department of Orthodontics, Faculty of Dentistry, Trakya University, Edirne, Türkiye

## ABSTRACT

**OBJECTIVE:** The aim of this study is to determine the factors that patients consider when choosing an orthodontist via social media and provide guidance to orthodontists regarding the effective utilization of social media in their professional practice.

**MATERIALS AND METHODS:** The research was conducted on a cohort of 476 individuals, comprising 222 (46.6%) males and 254 (53.4%) females. Of the patient population, 110 (23.1%) were 'Private Clinic' patients, 122 (25.6%) were 'Foundation University' patients and 244 (51.3%) were 'Public University' patients. The participants were asked to answer a comprehensive questionnaire consisting of 64 items, including questions related to demographic characteristics, details on orthodontic treatment, and their utilization of social media platforms in the process of selecting an orthodontist. Kruskal Wallis test (post hoc Dunn's test) and Mann Whitney U test were used for parameters that did not show normal distribution.

**RESULTS:** According to the data, Instagram and YouTube emerged as the prevalent social media platforms, with usage rates of 91.8% and 81.6% respectively. The paramount factor in choosing an orthodontist through social media was a significant quantity of positive patient comments (84%). The most important criteria when selecting the orthodontist was the clean appearance of the clinic and the instruments in the clinic (93.7%) and the orthodontist's good behavior at the first appointment (88.7%).

**CONCLUSIONS:** Social media platforms can benefit patients in many areas such as getting information about orthodontic treatment, choosing an orthodontist, learning the feedback of other patients, or asking questions about treatment.

**KEYWORDS:** Demographic survey; doctor patient relations; online systems; orthodontics; patient preference.

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[Türkçe özet makalenin sonundadır.]

## INTRODUCTION

Social media can be defined as a collection of digital technologies and applications that enable individuals to communicate and share ideas, opinions, experiences, and perspectives through online platforms. The prevalence of users on prominent social media sites, such as Facebook, TikTok, Twitter, LinkedIn, Instagram, Snapchat, YouTube, and WhatsApp, is experiencing an increasing tendency.<sup>1-6</sup> Social media platforms have facilitated global communication and interpersonal connections.<sup>7-10</sup> However; social media platforms are used not only for communication but also for educational purposes and marketing. According to the current literature, Instagram was the most effective marketing tool for both patients and professionals, followed by Twitter.<sup>11</sup> Throughout the years, social media marketing has assumed a notably substantial role in the context of healthcare corporations and the doctor-patient interaction. The inclusion of patients in social networks becomes advantageous in terms of providing them with comprehensive information regarding various treatment

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\*Corresponding author: Dr. Hande Uzunçubuk, Trakya Üniversitesi, Diş Hekimliği Fakültesi, Ortodonti Anabilim Dalı, 22030, Edirne, Türkiye  
E-posta: [handeuzuncubuk@trakya.edu.tr](mailto:handeuzuncubuk@trakya.edu.tr)

alternatives. Social media platforms can alleviate patients' concerns and improve treatment acceptance and satisfaction rates.<sup>12</sup> This finding is supported by the existing literature, which indicates that a significant majority of patients (87%) who participated in research and education regarding orthognathic surgery through social media platforms reported a reduction in anxiety levels.<sup>13</sup>

Numerous dental professionals across different specializations use social media platforms in order to share images, such as photographs or videos showing their clinical experiences, while also depending on these platforms for marketing purposes.<sup>14,15</sup> According to the results of a survey study, 52% of dentists in the United States use social media platforms primarily for marketing and communication.<sup>15</sup> The establishment and maintenance of a dentist's social media account play a crucial role in facilitating contact and communication with potential patients.<sup>16</sup> In contemporary times, the development of social media platforms has facilitated rapid access for patients to acquire knowledge related to innovations in orthodontics, the costs of treatments or orthodontic treatment alternatives, as well as accelerating communication with the dentists.<sup>17</sup> The utilization of social media has been prevalent among orthodontists, as it serves as an effective instrument for marketing and facilitating communication within orthodontic practices.<sup>7,18</sup> The fact that orthodontists are increasingly using Instagram supports this theory.<sup>19-22</sup>

In contemporary times, the increasing popularity of social media platforms has created a sense of curiosity about the utilization of these engines by patients in search of information pertaining to orthodontic treatment and the selection of an orthodontist. The aim of this study is to determine the factors that patients consider when choosing an orthodontist via social media and provide guidance to orthodontists regarding the effective utilization of social media in their professional practice.

## MATERIALS AND METHODS

This research was conducted in accordance with the Helsinki Declaration, and Istanbul University approved the protocol (Ethics Committee in 15.06.2021 - Protocol number: 2021/28-REV/1). All patients gave their written approval to take part in the study.

This study did not quantify the sample size since it sought to recruit as many orthodontic patients as possible over the designated time frame similar to previous studies<sup>1</sup>, so a total of 476 orthodontic patients were enrolled in the study to participate in filling an online questionnaire on Google Forms about their use of social media during the period from June 2021 to September 2023.

This study has been designed as a prospective cross-sectional study and aimed to include as many participants as possible within the designated

study period without conducting a prior sample size calculation. However, to assess the adequacy of the sample size and the generalizability of the findings, a post-hoc power analysis was performed. Assuming a medium effect size (Cohen's  $d = 0.3$ ), the analysis revealed a statistical power of 90.4% (0.90) at a significance level of  $\alpha = 0.05$ . This indicates that the sample size of 476 participants is statistically sufficient and supports the reliability and generalizability of the study results. The sample of the study consisted of orthodontic patients who were followed up by a public university, a foundation university, and private dental clinics.

The inclusion criteria were listed below:

- Receiving active orthodontic treatment
- Over 18 years old (adult patients)

The exclusion criteria were listed below:

- Individuals with limited reading and writing abilities

In the questionnaire, there were questions and statements designed to determine out the patients' age, gender, level of education, whether they use social media and, if so, which social media platforms they use, how long they spend on social media on average, and how they interact with orthodontists on social media. Also; the questions in section 1 about the social media through which patients get information about the treatment, the questions in section 2 about the social media through which they choose the orthodontist, the questions in section 3 about how orthodontists use social media professionally, the questions in section 4 about the factors that are important in choosing the orthodontist through social media, and the questions in section 5 about what patients pay the most attention to when choosing an orthodontist.

The questionnaire was meticulously designed based on a thorough review of existing literature<sup>1,7,13,16,23-25</sup> and careful evaluation of identified research gaps to ensure its relevance and comprehensiveness. Unlike studies with a predefined sample size, this research adopted a convenience sampling approach, aiming to recruit as many orthodontic patients as possible within the designated study period. This approach was chosen to ensure an adequate representation of the target population, as has been done in similar previous studies.<sup>5,7,16</sup> Patients completed the survey independently at their convenience, with no time restrictions imposed. The questionnaire consisted of 64 questions divided into five sections, each addressing critical aspects of the study objectives. Section 1 included 15 questions about obtaining information on orthodontic treatment via social media platforms, focusing on the most commonly used platforms. Section 2 comprised 12 questions exploring the process of selecting an orthodontist, analyzing factors like platform engagement and reviews. Section 3 consisted of 14 questions evaluating the professional utilization of social media by orthodontists, such as

demonstrating treatments, sharing patient comments, and increasing awareness of orthodontic treatment. Section 4 included 10 questions on patients' criteria for choosing orthodontists via social media profiles, emphasizing factors like positive patient comments and periodic treatment progress updates. Finally, Section 5 covered 13 questions assessing patients' preferences and priorities, with the clean appearance of the clinic and good behavior of the orthodontist at the first appointment ranking as top factors.

To enhance the clarity and ease of response for participants, a 3-point Likert scale (Disagree, Undecided, Agree) was used instead of a 5- or 7-point scale. This decision was made considering the sociocultural diversity of the participants, ensuring that the survey was more accessible and easier to complete while maintaining data reliability. The internal consistency of the scale was assessed using Cronbach's Alpha, confirming its statistical reliability.

The distribution of responses to these sections was thoroughly analyzed, providing insights into the variables of interest, such as patients' preferences and behaviors related to orthodontic treatment and social media usage. The study was conducted over a period from June 2021 to September 2023, during which the sample size of 476 participants was reached and data collection was concluded.

### Statistical Analysis

The percentage distribution of responses to the survey questions is provided. In addition, disagreed responses are scaled as '1', undecided responses as '2', and agreed responses as '3', and these scores are compared according to demographic questions. IBM SPSS Statistics 22 program was used for statistical analyses while evaluating the findings obtained in the study. Compliance of the parameters with normal distribution was evaluated by Kolmogorov-Smirnov test. In addition to descriptive statistical methods (mean, standard deviation, frequency), Kruskal Wallis test (post hoc Dunn's test) was used for comparisons of quantitative data between groups and Mann Whitney U test was used for comparisons between two groups for parameters that did not show normal distribution. Cronbach's alpha coefficient was calculated for scale reliability. Significance was evaluated at  $p < 0.05$  level.

### RESULTS

The study was performed on a total of 476 patients, 222 (46.6%) males and 254 (53.4%) females, aged between 18 and 52 years. The mean age was  $22.99 \pm 5.81$  years. 14 (2.9%) were primary school graduates, 141 (29.6%) were high school graduates, 298 (62.6%) were university graduates, and 23 (4.8%) were master-doctorate graduates. Of the patients, 110 (23.1%) were Private Clinic patients, 122 (25.6%) were Foundation University patients and 244 (51.3%) were Public University patients.

Instagram (91.8%) and YouTube (81.6%) were the most commonly used social media tools. 30.6% used social media for 60-90 minutes and 24.1% used social media for 120 minutes or more. 69.9% of the respondents used social media between the hours 18.00- 00.00 in the evening. 70.7% of the patients had not reached the social media account of the orthodontist. While 37.6% of the patients allowed the orthodontist to share intraoral or extraoral photos for advertising purposes, 46.4% did not allow any photos to be shared (Table 1). To the question "How often should your orthodontist share professional posts on social media?" 30.5% of the patients answered once a week, 36.3% answered once every two-three days (Table 1).

The answers given to the scale questions in the form of disagreed, undecided and agreed are shown in Table 2 in terms of percentages. Patients highly use the google, instagram, and youtube engine to get information about orthodontic treatment (66.8%, 41.2%, 57.8%, respectively) (Table 2).

The rate of determining the orthodontist through social media is 'disagreed' for facebook, google, instagram, twitter and youtube social media platforms (83.4%, 52.3%, 60.9%, 81.7%, 62.8%, respectively) (Table 2).

According to the section on the purposes for which orthodontists should use social media professionally; they gave high scores to the following options: to learn patient comments (79.2%), to communicate with their patients (59.5%), to introduce themselves personally (67.4%), to follow professional posts and stay up to date (80.3%), to increase awareness of orthodontic treatment (82.1%), and to show the treatments they perform (77.1%) (Table 2).

When patients choose their orthodontists through social media, they gave high scores to the options of a significant quantity of information being shared (57.1%), awards received by the specialist (68.3%), a significant quantity of photos/videos of patients before/ after treatment (58.8%), a significant quantity of photos/videos of patients showing periodic improvements in their treatment (63.9%), and a significant quantity of positive patient comments (84%) (Table 2).

In the answers given to the question of what patients decide on when choosing their orthodontist; the orthodontist's good behavior at the first appointment (88.7%), the title of the orthodontist (65.8%), the location of the clinic (63.4%), the clean appearance of the clinic and the instruments in the clinic (93.7%), acquaintance recommendation (75.8%), and the price of treatment (69.3%) received high scores (Table 2).

The responses to the questions in the five sections were scored from 1 to 3 (disagree:1, undecided:2, agree:3) and average scores were calculated for each section. The reliability analysis of the different sections in the study was assessed using Cronbach's Alpha

**Table 1.** Assessment of the utilization of social media platforms and the frequency of orthodontists sharing professional posts on social media from the patients' perspective.

		n	%
<b>Use of social media (n=476)</b>	Yes	468	98.3
	No	8	1.7
<b>Social media applications used (n=468)</b>	Facebook	122	26.1
	Google	339	72.4
	Instagram	437	91.8
	Twitter	257	54.9
	Youtube	382	81.6
	Others	48	10.3
<b>Social media usage time per day (n=468)</b>	1-30 min	38	8.1
	30-60 min	97	20.7
	60-90 min	143	30.6
	90-120 min	77	16.5
	120 min+	113	24.1
<b>Time interval (n=468)</b>	06-12 (morning)	12	2.6
	12-18 (noon)	89	19
	18-24 (evening)	327	69.9
	00-06 (night)	40	8.5
<b>Have you reached your orthodontist's social media account? (n=468)</b>	Yes, I sent a request	63	13.5
	Yes, but I didn't send a request	74	15.8
	No, I didn't	331	70.7
<b>Do you communicate with your orthodontist about your treatment via social media? (n=468)</b>	Yes	75	16
	No	393	84
<b>Does your orthodontist reach you via social media? (n=468)</b>	Yes	104	22.2
	No	364	77.8
<b>Do you allow your orthodontist to share your intraoral or extraoral photos for advertising purposes? (n=476)</b>	Yes, I allow both of them	179	37.6
	Yes, only extraoral photos	12	2.6
	Yes, only intraoral photos	64	13.4
	No, I don't allow either of them	221	46.4
<b>How often should your orthodontist share professional posts on social media?</b>	1 or less per month	35	7.4
	1 per week	145	30.5
	1 every two to three days	173	36.3
	1 in a day	78	16.4
	More than 1 per day	45	9.5

coefficients, as presented in Table 3. Cronbach's Alpha is a widely used measure of internal consistency, with values ranging from 0 to 1. A coefficient of 0.7 or higher is generally considered acceptable, while values exceeding 0.8 indicate good reliability, and values above 0.9 suggest excellent reliability. In this study, a 3-point Likert scale was used instead of the commonly preferred 5- or 7-point scales. This decision was made to enhance the clarity and ease of response for participants, particularly considering the diverse sociocultural backgrounds of the study population. More extensive scales can sometimes

lead to response fatigue or difficulty in distinguishing between close response options, especially for participants with lower education levels. The simplified scale aimed to increase response accuracy and completion rates, ensuring more reliable data collection. Additionally, the reliability of the 3-point Likert scale was assessed using Cronbach's Alpha, with values ranging from 0.758 to 0.838, confirming its statistical reliability. These findings suggest that a 3-point scale was an appropriate methodological choice, balancing ease of understanding with data quality.

The section on obtaining information about

**Table 2.** Distribution of answers to the questions in the sections.

	Disagreed	Undecided	Agreed
	n (%)	n (%)	n (%)
<b>Section 1: Obtaining information about orthodontic treatment via social media platforms</b>			
Facebook	382 (80.3%)	42 (8.8%)	52 (10.9%)
Google	116 (24.4%)	42 (8.8%)	318 (66.8%)
Instagram	218 (45.8%)	62 (13%)	196 (41.2%)
Twitter	366 (76.9%)	53 (11.1%)	57 (12%)
Youtube	144 (30.3%)	57 (12%)	275 (57.8%)
<b>Section 2: Choosing an orthodontist via social media platforms</b>			
Facebook	397 (83.4%)	44 (9.2%)	35 (7.4%)
Google	249 (52.3%)	66 (13.9%)	161 (33.8%)
Instagram	290 (60.9%)	67 (14.1%)	119 (25%)
Twitter	389 (81.7%)	50 (10.5%)	37 (7.8%)
Youtube	299 (62.8%)	70 (14.7%)	107 (22.5%)
<b>Section 3: The utilization of social media platforms for professional purposes among orthodontists</b>			
To learn patient comments	40 (8.4%)	59 (12.4%)	377 (79.2%)
In order to communicate with their patients	87 (18.3%)	106 (22.3%)	283 (59.5%)
For the purpose of personal self-promotion	61 (12.8%)	94 (19.7%)	321 (67.4%)
In order to follow and keep up to date with professional sharing	40 (8.4%)	54 (11.3%)	382 (80.3%)
In order to increase awareness of orthodontic treatment	36 (7.6%)	49 (10.3%)	391 (82.1%)
To demonstrate the treatments they perform	42 (8.8%)	67 (14.1%)	367 (77.1%)
<b>Section 4: Selection of orthodontist via social media profile</b>			
A significant quantity of information being shared	103 (21.6%)	101 (21.2%)	272 (57.1%)
Awards received by the orthodontist	65 (13.7%)	86 (18.1%)	325 (68.3%)
Orthodontist's appearance	300 (63%)	77 (16.2%)	99 (20.8%)
Short duration of treatment for former patients	173 (36.3%)	124 (26.1%)	179 (37.6%)
A significant quantity of photos/videos of patients before/after treatment	108 (22.7%)	88 (18.5%)	280 (58.8%)
A significant quantity of photos/videos showing the progress of patients' treatments periodically	82 (17.2%)	90 (18.9%)	304 (63.9%)
A significant quantity of positive patient comments	32 (6.8%)	44 (9.2%)	400 (84%)
A significant quantity of likes on their posts	234 (49.2%)	118 (24.8%)	124 (26.1%)
A significant quantity of followers	225 (47.3%)	130 (27.3%)	121 (25.4%)
Applied discount campaigns	168 (35.3%)	129 (27.1%)	179 (37.6%)
<b>Section 5: What criteria did you employ in selecting your orthodontist?</b>			
Good behavior of the orthodontist at the first appointment	26 (5.5%)	28 (5.9%)	422 (88.7%)
The orthodontist has his/her own clinic	151 (31.7%)	118 (24.8%)	207 (43.5%)
The orthodontist's social media account	231 (48.5%)	123 (25.8%)	122 (25.6%)
The orthodontist's participation in TV programs	257 (54%)	107 (22.5%)	112 (23.5%)
The orthodontist's title	70 (14.7%)	93 (19.5%)	313 (65.8%)
Website of the orthodontist or clinic	156 (32.8%)	122 (25.6%)	198 (41.6%)
Having articles published in the press such as newspapers or magazines	157 (33%)	115 (24.2%)	204 (42.9%)
Location of the clinic	105 (22.1%)	69 (14.5%)	302 (63.4%)
Beautiful design and architecture of the clinic	184 (38.7%)	126 (26.5%)	166 (34.9%)
Clean appearance of the clinic and instruments in the clinic	18 (3.8%)	12 (2.5%)	446 (93.7%)
Institution agreement	88 (18.5%)	149 (31.3%)	239 (50.2%)
Acquaintance recommendation	57 (12%)	58 (12.2%)	361 (75.8%)
Treatment price	64 (13.4%)	82 (17.2%)	330 (69.3%)
Coincidence (I saw him passing by, etc.)	313 (65.8%)	95 (20%)	68 (14.3%)

**Table 3.** Descriptive characteristics of the section scores.

	Minimum	Maximum	Mean±SD	Median	Cronbach's Alpha	Effect Size (Cohen's d)
Score for getting information about orthodontic treatment via social media platforms	1	3	1.86±0.51	1.8	0.758	0.27
Score for selecting the orthodontist via social media platforms	1	3	1.51±0.59	1.4	0.831	0.83
Score for orthodontists' professional use of social media platforms	1	3	2.64±0.49	2.8	0.838	1.30
Orthodontist selection score on social media profile	1	3	2.17±0.48	2.2	0.806	0.35
Reasons for choosing an orthodontist score	1	3	2.24±0.40	2.3	0.805	0.60

The section 'Professional use of social media platforms by orthodontists' has the highest effect size (1.30), indicating a statistically significant and strong difference.

**Table 4.** The comparisons of the mean scores of the five sections according to demographic questions.

		Score for getting information about orthodontic treatment via social media platforms	Score for selecting the orthodontist via social media platforms	Score for orthodontists' professional use of social media platforms	Orthodontist selection score on social media profile	Reasons for choosing an orthodontist score
		Mean±SD (median)	Mean±SD (median)	Mean±SD (median)	Mean±SD (median)	Mean±SD (median)
<b>Center</b>	Private Clinic	1.85±0.54 (1.8)	1.59±0.63 (1.4)	2.69±0.44 (2.8)	2.23±0.49 (2.2)	2.32±0.4 (2.3)
	Foundation Uni	1.85±0.53 (1.8)	1.44±0.58 (1.2)	2.51±0.58 (2.7)	2.11±0.51 (2.2)	2.14±0.42 (2.1)
	Public Uni	1.88±0.49 (1.8)	1.51±0.58 (1.4)	2.67±0.45 (2.8)	2.17±0.45 (2.1)	2.26±0.39 (2.2)
	<sup>1</sup> p	0.834	0.204	0.015*	0.214	0.004*
<b>Gender</b>	Male	1.77±0.53 (1.8)	1.5±0.6 (1.4)	2.61±0.53 (2.8)	2.16±0.49 (2.2)	2.21±0.44 (2.2)
	Female	1.94±0.48 (2)	1.52±0.59 (1.4)	2.66±0.45 (2.8)	2.17±0.47 (2.2)	2.27±0.37 (2.3)
	<sup>2</sup> p	0.001*	0.573	0.981	0.691	0.130
<b>Educational Level</b>	Primary School	1.81±0.68 (1.7)	1.47±0.74 (1)	2.1±0.81 (2.2)	2.07±0.53 (2.1)	2.23±0.6 (2.3)
	High School	1.79±0.57 (1.8)	1.51±0.63 (1.2)	2.55±0.55 (2.8)	2.16±0.52 (2.2)	2.15±0.47 (2.1)
	University	1.89±0.47 (1.8)	1.49±0.56 (1.4)	2.72±0.39 (2.8)	2.18±0.44 (2.2)	2.28±0.35 (2.3)
	Master/PhD	2.01±0.46 (2)	1.77±0.61 (1.8)	2.44±0.63 (2.7)	2.1±0.63 (2)	2.29±0.38 (2.3)
	<sup>1</sup> p	0.224	0.104	0.001*	0.799	0.037*

<sup>1</sup>Kruskal Wallis Test

<sup>2</sup>Mann Whitney U Test, \*p<0.05

orthodontic treatment via social media showed acceptable reliability, with a Cronbach's Alpha of 0.758. The scores for selecting an orthodontist and assessing their professional use of social media demonstrated good reliability, with Alpha values of 0.831 and 0.838, respectively. Additionally, the orthodontist selection score based on social media profiles had a Cronbach's Alpha of 0.806, while the reasons for choosing an orthodontist scored 0.805, both reflecting good internal consistency. Overall, these results indicate reliable measurement across the sections evaluated. Effect Size (Cohen's *d*) is a measure used to assess the clinical or practical significance of section scores: 0.2 indicates a small effect, 0.5 indicates a moderate effect, 0.8 and above indicate a large effect. In this study, the section "Professional use of social media platforms by orthodontists" has the highest effect size (1.30), suggesting a statistically strong difference (Table 3).

Table 4 shows the comparisons of the mean scores of the questions in these five sections according to demographic questions. There was a statistically significant difference between the centers in terms of orthodontists' professional use of social media and reasons to choose an orthodontist scores ( $p < 0.05$ ). The scores of patients attending foundation universities were significantly lower than those of patients attending public universities and private clinics ( $p < 0.05$ ) (Table 4).

The scores of female patients receiving information about orthodontic treatment from social media were statistically significantly higher than male patients ( $p < 0.05$ ) (Table 4).

There was a statistically significant difference between education levels in terms of orthodontists' professional use of social media. As a result of the post hoc tests performed to determine the significance, it was determined that the scores of the patients with university degrees were significantly higher than the scores of the patients with primary education degrees ( $p < 0.05$ ). Also there was a statistically significant difference between education levels in terms of reasons to choose an orthodontist scores. It was found that the scores of high school graduates were significantly lower than the scores of university and master's/PhD graduates ( $p < 0.05$ ) (Table 4).

## DISCUSSION

According to the research conducted by Nelson *et al.*, it was found that Facebook ranked as the most often used social media platform among the patient population.<sup>7</sup> The researchers found that a significant majority of orthodontic patients, exactly 80.3%, were utilizing the social media platform Facebook. Furthermore, it is worth noting that Instagram emerged as the predominant social media site, obtaining a substantial 92.53% of the market share. YouTube, Google, and Twitter subsequently followed Instagram. The findings of this study indicate a decrease in the popularity of

Facebook, contrasted with a notable growth in the popularity of Instagram.<sup>7</sup> According to the results of this study, Instagram and YouTube were the most widely used social media tools. This result stated that both patients and orthodontists will increasingly utilize social media as a regular practice in the forthcoming years.

The time intervals during which patients used social media the most were examined only in the study by Nelson *et al.* However, it was determined that the time intervals were not equally divided in this study.<sup>7</sup> In our study, the time intervals were divided equally and it was determined that the period during which patients utilized social media the most was between 18:00 and 00:00. In the present study, an examination was conducted to assess the degree to which patients consented to the sharing of their personal photographs. The findings revealed a substantial proportion of the patient cohort exhibited a reluctance to authorize the sharing of both intraoral and extraoral photographs. The frequency of social media postings by orthodontists has not been observed in the current studies. In this study, patients also overwhelmingly reported that orthodontists should make professional posts on their social media accounts once a week or with a frequency of every two to three days. According to these findings, it can be concluded that orthodontists can be followed more if they post on their social media accounts at least once a week in the evening hours.

Henzel *et al.* reported that only 6.7% of patients accessed social media platforms for orthodontic treatment-related information.<sup>23</sup> Sharif *et al.* determined that 21% of patients obtained information regarding orthodontic treatment through various social media platforms, including YouTube, Facebook, Instagram, Twitter, Pinterest, and blogs.<sup>25</sup> In contrast to these studies, Sampson *et al.* and Meire *et al.* stated that a large percentage of patients obtained information about orthodontic treatment and contacted health services via social media platforms (76.9% and 63.1%).<sup>12,21,24</sup> According to Siddiqui *et al.*, a study revealed that a majority of patients, specifically 64%, demonstrated awareness of the potential of social media platforms as a means to access information pertaining to orthodontic treatment. Additionally, a significant proportion, specifically 30%, reported prior utilization of social media for this purpose.<sup>26</sup>

According to this study patients highly use the google, Instagram, and Youtube engine to get information about orthodontic treatment. However, Facebook and Twitter exhibited limited utilization rates. In contrast, patients exhibit a lower preference for utilizing Facebook and Twitter for this particular purpose. The respondents additionally express the belief that orthodontists have to utilize social media platforms in order to follow professional posts and stay up to date, to increase awareness of orthodontic treatment, to learn patient comments, and to show the various treatments they perform. The findings of this study can serve as a guide for orthodontists in their decision-making process

regarding the content they choose to share. Patients responded to questions regarding how orthodontists use social media for professional purposes based on their own social media experiences, the content they encountered, and their general observations. The posts shared by orthodontists they follow, patient reviews, recommended posts, and advertisements were among the factors shaping this perception. Although not all patients directly communicated with their orthodontists via social media, they formed opinions by observing general trends and professional posts in the field of dentistry. The survey used in this study included questions about patients' social media usage patterns, the platforms they were active on, and the factors they considered when selecting an orthodontist, with responses shaped by these factors. For most patients, social media served more as a tool for gathering information and evaluation rather than direct communication. Therefore, their responses were influenced not only by personal interactions but also by the content they were exposed to on social media, general user trends, and their overall observations. In addition, although patients were reluctant to have their intraoral and extraoral photos taken, progress photos, positive patient comments and shared information are important in the process of patients' decision-making process for their orthodontist.

Bedair *et al.* conducted a study which revealed that the influence of a physician who provides a sense of comfort in patients significantly impacts their selection of an orthodontist.<sup>5</sup> According to Alalawi *et al.*, the primary factors influencing patients' selection of dental clinics were identified as the presence of advanced facilities and technology, accessibility to the national health system, and positive recommendations from acquaintances. According to the study conducted by Alalawi *et al.*, favorable feedback emerged as the primary factor influencing individuals' selection of a doctor via social media platforms. The dentist's level of professionalism ranked second in importance, while awards and the quantity of likes considered the least significant factors.<sup>16</sup> According to the results of this study, it is evident that patients prioritize the clean appearance of the clinic and its instruments, as well as the orthodontist's good behavior at the first appointment and its tools, as the primary determinants in their selection of an orthodontist. Also, according to the results of this study, the title of the orthodontist and the location of the clinic were also factors that patients attach importance to when choosing an orthodontist. These findings have the potential to offer patient-centered orthodontists with valuable insights.

Several research have documented that females exhibit a higher frequency of social media usage compared to males.<sup>23,27</sup> According to this study, the scores of female patients receiving information about orthodontic treatment from social media were significantly higher than male patients. These findings indicate that females have a higher propensity for

utilizing social media platforms as a means of obtaining information pertaining to orthodontic treatment, as compared to males in parallel with previous studies.

Public universities, foundation universities, and private clinics exhibit significant differences in the healthcare services they provide. Public universities generally serve a larger patient population and offer low-cost treatment options. However, due to high patient volume, appointment waiting times may be longer, and access to a physician may be more limited. In contrast, foundation universities have better physical conditions and shorter waiting times compared to public universities, yet their treatment costs tend to be higher. Private clinics, on the other hand, focus on providing the highest level of patient comfort, utilizing the latest technologies, and ensuring individualized patient satisfaction. However, the cost of treatment in these clinics is usually higher than in the other two institutions. These differences may also influence patients' social media usage habits. For instance, private clinic patients, who prioritize aesthetics and service quality, may be more inclined to research clinics and doctors through social media. Conversely, public university patients may focus on economic and accessible healthcare services, evaluating different criteria when using social media.

Furthermore, it was found that university graduate patients expressed the opinion that orthodontists should share more professional posts on social media platforms compared to patients with primary school education. It can be concluded that there exists a positive correlation between the amount of education and patients' inclination towards obtaining information from social media platforms.

The findings of this study indicate that a significant proportion of patients did not communicate with their orthodontists via social media, did not access their orthodontists' social media accounts, or were not contacted by their orthodontists through social media, as shown in Table 1. This suggests that social media primarily serves as an indirect influence in the orthodontist selection process rather than a direct communication tool between patients and orthodontists. Instead of engaging in direct messaging, patients tend to rely on social media for passive information gathering, such as reviewing patient feedback, assessing visual content, and following clinic profiles. Therefore, this study highlights that while social media is widely used for information-seeking, its role in direct patient-practitioner communication remains limited, which should be considered in future research.

This study also has some limitations. It's essential to be discerning when searching health information online because not all social media accounts provide accurate, reliable, or up-to-date information.<sup>28,29</sup> It's important to be aware of the presence of advertisements on the social media platforms.<sup>30</sup> Some accounts may prioritize revenue over the accuracy of information and

patients should be critical of social media profiles that heavily promote or sell specific products or treatments. Also, user reviews and ratings may not always reliable and reflect the accuracy of the content. Hence, it is important for patients who need orthodontic treatment to consult with an orthodontist one-on-one and get information according to their specific situation, rather than learning the primary information from social media platforms.

Additionally, this study relies on self-reported data collected through an online survey, which may introduce response bias due to differences in participants' interpretations of questions or recall accuracy. The sample, although diverse, consists of individuals who actively use social media, potentially limiting the generalizability of the findings to those who do not engage with online platforms as frequently. Furthermore, while the study examines social media's role in orthodontist selection and patient decision-making, it does not assess the actual effectiveness or accuracy of the information provided by orthodontists on these platforms. Future research should incorporate objective assessments of online content quality and its direct impact on patient choices. Moreover, longitudinal studies would be beneficial to evaluate how social media influences patient decisions over time and whether engagement levels change with different phases of treatment. Expanding the study to include a broader demographic scope and integrating clinical outcomes with online engagement patterns could further enhance the understanding of social media's role in orthodontic practice.

## CONCLUSIONS

The influence of social media on patients' decision-making processes regarding the selection of orthodontists has been found to be substantial.

The findings of this study have identified the key factors that patients take into account when choosing an orthodontist, thereby serving as a valuable resource for orthodontists seeking to adopt a patient-centric approach to their social media usage.

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## **Hastaların perspektifinden ortodontik tedavinin sosyal medya pazarlaması: kesitsel bir çalışma**

### **ÖZET**

**AMAÇ:** Bu çalışmanın amacı, hastaların sosyal medya aracılığıyla ortodontist seçerken göz önünde bulundurdıkları faktörleri belirlemek ve ortodontistlere mesleki uygulamalarında sosyal medyayı etkili bir şekilde kullanmaları konusunda rehberlik etmektir.

**GEREÇ VE YÖNTEMLER:** Araştırma 222 (%46.6) erkek ve 254 (%53.4) kadından oluşan 476 kişilik bir hasta popülasyonu üzerinde yürütülmüştür. Hasta popülasyonunun 110'u (%23.1) 'Özel Klinik' hastası, 122'si (%25.6) 'Vakıf Üniversitesi' hastası ve 244'ü (%51.3) 'Devlet Üniversitesi'

hastasıdır. Katılımcılardan demografik özellikler, ortodontik tedaviye ilişkin detaylar ve ortodontist seçme sürecinde sosyal medya platformlarını kullandıklarına ilişkin soruları içeren 64 sorudan oluşan kapsamlı bir anketi yanıtlamaları istenmiştir. Normal dağılım göstermeyen parametreler için Kruskal Wallis testi (post hoc Dunn's testi) ve Mann Whitney U testi kullanılmıştır.

**BULGULAR:** Instagram ve YouTube sırasıyla %91.8 ve %81.6'lık kullanım oranlarıyla en yaygın sosyal medya platformları olarak belirlendi. Sosyal medya aracılığıyla ortodontist seçiminde en önemli faktör, önemli miktarda olumlu hasta yorumuydu (%84). Ortodontist seçiminde en önemli kriterler kliniğin ve klinikteki aletlerin temiz görünümü (%93.7) ve ortodontistin ilk randevudaki iyi davranışlarıydı (%88.7).

**SONUÇLAR:** Sosyal medya platformları hastalara ortodontik tedavi hakkında bilgi almak, ortodontist seçmek, diğer hastaların geri bildirimlerini öğrenmek veya tedavi hakkında soru sormak gibi birçok alanda fayda sağlayabilir. Sosyal medya platformlarının artan kullanımı nedeniyle, ortodontistlerin bu alandaki profillerini yönetmeleri önemlidir.

**ANAHTAR KELİMELER:** çevrim içi sistemler; demografik anket; doktor-hasta ilişkileri; hasta tercihi; ortodonti.