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ORIGINAL RESEARCH

Determinants of Orthodontist Selection Among Adolescents: The Role of Digital Information Sources

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Purpose: Adolescents are among the primary recipients of orthodontic treatment and are active users of digital platforms. While digital environments are increasingly associated with healthcare-related perceptions, orthodontist selection is a multifactorial process influenced by various clinical, professional, and informational factors. This study aimed to evaluate adolescents' orthodontist selection criteria and to examine the role of digital information sources within this decision-making process.

Patients and Methods: This cross-sectional study included 180 adolescent patients (aged 11–18 years) who attended an initial orthodontic consultation at a dentistry faculty. Data were collected using a self-administered 63-item questionnaire assessing socio-demographic characteristics, digital information-seeking behaviors, and orthodontist selection criteria. Of these, 45 items constituted the multidimensional Digital Determinants of Orthodontist Selection Instrument (DDOSI), which was developed to evaluate factors influencing orthodontist selection and demonstrated high internal consistency (Cronbach's $\alpha > 0.930$). Statistical analyses included chi-square tests, exploratory factor analysis, and group comparisons using appropriate parametric and nonparametric tests.

Results: Participants reported an average daily use of digital platforms of 3 ± 1.01 hours. Google (41.1%) was the most frequently used information source, whereas Instagram (28.3%) was the most commonly used social media platform. A majority of adolescents reported searching online for health-related information (75.6%) and aesthetic procedures (57.2%). The most influential criterion in orthodontist selection was clinic cleanliness (22.7%), followed by the orthodontist's professional confidence/enthusiasm (9.3%) and the use of up-to-date technological equipment (7.6%). Significant differences were observed according to age, gender, socioeconomic status, and parental education level ($p < 0.05$).

Conclusion: Adolescents' orthodontist selection is primarily driven by clinical and professional factors. Digital information sources play a complementary role by supporting information acquisition and shaping perceptions rather than acting as primary determinants in decision-making.

Keywords: adolescent, decision-making, orthodontist selection, patient preference, digital information sources

In recent years, the rapid expansion of digital technologies has fundamentally reshaped modern life, including the field of healthcare.[1,2] From a healthcare perspective, the wide reach, flexibility, and low cost of digital platforms have enabled them to become powerful tools that facilitate both patient access to information and the promotion of clinicians and clinics.[3,4] These digital information sources include social media (eg, Instagram, TikTok, YouTube, X) as well as search engines (eg, Google), each serving distinct but complementary roles in health information-seeking.[5,6] Patients use these platforms for a variety of purposes, including expressing emotions, comparing their experiences with others, and seeking information and network support.[2,7] Studies show that patients, depending on age group, frequently use platforms such as Instagram, X, YouTube, Snapchat, TikTok, and Facebook.[8–10]

Understanding the content preferences and interests of patients is as crucial as comprehending their digital engagement patterns. Recognizing these preferences not only helps healthcare professionals communicate more effectively with

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their audience but also guides how they present information online. Some doctors actively use social media to share informative content for patients.[11,12] Educational posts, updates on post-surgical processes, and patient-oriented recommendations can strengthen the perception that the doctor is trustworthy and accessible.[13,14] Studies on patients' preferences in selecting physicians indicate that the tendency to choose doctors through digital platforms is gradually increasing.[5,7,15–18] As in other medical fields, patients in dentistry—particularly in orthodontics—have begun to select doctors and clinics by evaluating their online presence and digital promotions.[19,20]

Recent studies suggest that digital platforms are increasingly associated with orthodontist selection and treatment-related decision-making.[20–24] Patients frequently use online content to obtain information about treatment options, explore patient experiences, and compare healthcare providers. However, the accuracy and quality of such information may vary considerably.

Digital content—such as educational posts, treatment simulations, and before-and-after images—has been reported to contribute to perceptions of professionalism and trustworthiness. At the same time, user-generated content shows substantial variability and lacks consistent quality control. While these digital factors may contribute to perceptions and expectations, evidence indicates that they do not act independently. Clinical quality, professional credibility, and treatment-related characteristics remain central determinants in healthcare provider selection.[13–15]

Adolescents constitute a primary patient group receiving orthodontic care and are also highly active users of digital information sources.[10,22] For orthodontists, understanding which factors adolescents prioritize when selecting a healthcare provider—including both digital content and traditional clinical indicators—is essential for enhancing patient motivation and adherence. Although the literature indicates that digital media is associated with orthodontist selection, recent studies often include heterogeneous age groups, and data derived specifically from adolescent patients remain limited.[20,22,24] Moreover, the relative importance of digital information sources compared to conventional determinants of choice (such as clinical environment, professional credentials, and trust signals) has not been adequately examined in this population.

Based on this gap, the present study aimed to identify the key determinants of orthodontist selection among adolescents, with particular attention to the role of digital information sources. Specifically, we examined adolescents' digital information-seeking habits, identified the criteria they consider most important when choosing an orthodontist and clinic, and explored how demographic factors are associated with these preferences.

Methods

Study Design and Participants

This study was designed as an observational cross-sectional survey and conducted in the Department of Orthodontics, Faculty of Dentistry, Çukurova University, Türkiye, between May and June 2023.

Inclusion criteria were: (1) age between 11 and 18 years, (2) no prior orthodontic treatment, and (3) willingness to participate in the study. Patients with systemic conditions affecting cognitive ability or those unable to complete the questionnaire were excluded. Exclusion criteria included the presence of craniofacial anomalies, previous or ongoing orthodontic treatment, and inability or unwillingness to provide informed consent.

The study was approved by the Research Ethics Committee, Faculty of Medicine, Çukurova University (Meeting No: 137/2023, Decision No: 19) and conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from all participants and their parents or legal guardians.

Data Collection Instrument

Data were collected using a self-administered questionnaire completed by participants during their initial orthodontic consultation. Participants completed the questionnaire independently in a supervised clinical setting without time restrictions.

Sample Size Calculation

All sample size and power calculations were conducted at the α=0.05 significance level using G*Power version 3.1.9.7. Considering the exploratory and cross-sectional design of the study, a medium standardized effect size of 0.25 was assumed. The minimum required sample size was calculated as 175 to achieve 0.95 statistical power. Allowing for potential exclusions, the target sample size was set at 200. During screening, 12 individuals who did not meet the eligibility criteria and 3 who declined participation were excluded, yielding 185 eligible participants. After the pilot study, the finalized data collection form was administered face-to-face to eligible individuals during their initial examination. Participants completed the form independently and without time restrictions. Forms with missing data (n = 5) were excluded from the analysis, resulting in a final sample of 180 participants.

Questionnaire Development

A comprehensive questionnaire was developed by the authors to evaluate adolescent patient preferences related to orthodontist selection. The draft instrument was reviewed by three orthodontists for content validity, after which a pilot study with 15 participants was conducted to assess clarity, linguistic accuracy, and feasibility. Revisions were made based on pilot feedback. Pilot data were not included in the final analysis. The final questionnaire demonstrated high internal consistency, with Cronbach's alpha coefficient exceeding 0.930.

Questionnaire Structure

The data collection instrument used in this study was developed based on a review of the current literature on adolescents' digital information-seeking behaviours and healthcare decision-making. The final questionnaire consisted of 63 items and was structured into three main sections, each designed to evaluate a specific conceptual domain [Supplementary Figure S1].

1. Sociodemographic Characteristics: Assessed participant age, gender, educational status, parental occupation, and household income.

2. Digital Health Information-Seeking Behaviors: Explored platforms used, frequency and purpose of use, and patterns of searching for health-related information online.

3. Factors Influencing Orthodontist and Clinic Selection: A measurement instrument (Digital Determinants of Orthodontist Selection Instrument-DDOSI) was developed to identify the factors that influence patients' selection of orthodontists and clinics and to evaluate the importance of digital content, professional communication, the clinical environment, and online visibility in their decision-making processes. The instrument includes assessments related to the clinician's personal and professional image, clinical comfort and service diversity, educational and promotional content shared on social media, levels of digital visibility, and perceived online trustworthiness. Comprising 45 items across five subdimensions, the measurement instrument aims to provide a comprehensive evaluation of the digital and professional determinants associated with patients' choices of orthodontists.

Statistical Analysis

All statistical analyses were conducted using data obtained from the 63-item questionnaire. Initially, frequencies and percentages were reported for all categorical items, and mean, median, standard deviation, minimum, and maximum values were presented for all quantitative variables. Associations between categorical variables were examined using cross-tabulations. The Chi-square test was applied to assess relationships; however, when more than 20% of expected cell counts fell below the minimum requirement of 5, the Fisher's Exact test was used instead. A comprehensive reliability and validity assessment was performed for the 45-item DDOSI measuring factors associated with orthodontist selection in digital environments (Table 1). Internal consistency reliability was evaluated using Cronbach's α. Construct validity was assessed through exploratory factor analysis (EFA), employing principal axis factoring extraction with oblimin rotation. The EFA identified five conceptually coherent dimensions of DDOSI:

1. Personal and professional identity/image,
2. Clinical comfort and service diversity,

Table 1 Factors Influencing Orthodontist and Clinic Selection

	Factors					Item KMO
	F1	F2	F3	F4	F5	
Gender of the orthodontist	0.336					0.694
Personal image of the orthodontist	0.422					0.711
Attractiveness of the orthodontist	0.331					0.830
Appearance of the orthodontist's teeth/smile	0.382					0.805
Years of professional experience	0.472					0.774
Participation in professional congresses	0.511					0.847
Provision of educational courses	0.494					0.877
Possession of special or patented products	0.603					0.849
Certificates and awards	0.539					0.816
Size of the clinic	0.322					0.880
Post on commemorative days (political/national/religious)	0.487					0.789
Clinic located in a central area		0.399				0.839
The clinic near home or commute route		0.562				0.813
Cleanliness of the clinic		0.448				0.756
Presence of multiple dental specialties		0.448				0.789
Treatment of international patients		0.531				0.917
Treatment of celebrities		0.387				0.871
High patient volume		0.263				0.862
Availability of clear aligner		0.652				0.842
Availability of orthognathic surgery		0.648				0.843
Use of up-to-date technological equipment		0.524				0.853
Before-after photos on social media			0.739			0.820
Treatment simulation posts			0.807			0.849
Informative videos about the orthodontist			0.514			0.935
Educational posts			0.604			0.823
Entertaining posts			0.559			0.713
Clinic design and decoration			0.230			0.877
Number of staff			0.368			0.876
Personal posts (family/friends)				0.561		0.757
Photos with patients				0.397		0.857
Sports/artistic photos				0.581		0.867
Luxury lifestyle posts				0.588		0.835
Posts about TV appearances				0.505		0.842
A high number of followers				0.732		0.792
A high number of likes				0.772		0.817
Recommendations by high-follower accounts				0.536		0.880
Followed by accounts the user also follows				0.679		0.916
High posting frequency				0.420		0.895
Recommendations from friends/acquaintances				0.311		0.864
High confidence/ professional enthusiasm of orthodontist					0.311	0.795
Academic title of orthodontist					0.469	0.851
Google ratings and reviews					0.598	0.819
Reviews on physician-rating websites					0.667	0.832
Patient reviews on social media					0.539	0.846
Content biography/information box					0.386	0.897

Notes: Principal axis factoring extraction method and oblimin rotation were applied. Principal axis factoring with oblimin rotation was used. KMO was 0.840, and Bartlett's test of sphericity was significant ($\chi^2 = 3953.6$, $p < 0.001$). Five factors with eigenvalues > 1 explained 42.2% of the total variance, with factor loadings ranging from 0.230 to 0.807.

3. Educational/promotional content on digital platforms,
4. Orthodontist's visibility on digital platforms,
5. Orthodontist's trustworthiness on digital platforms.

Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated for all questionnaire items. Before comparing questionnaire item scores and subdimension scores across groups, normality was assessed using the Shapiro–Wilk test together with skewness and kurtosis coefficients. Because individual item scores had a discrete/ordinal structure and did not meet the assumption of normal distribution, nonparametric tests were used for item-level comparisons (Mann–Whitney *U*-test for two-group comparisons and Kruskal–Wallis *H*-test for comparisons involving three or more groups). In contrast, subdimension scores demonstrated an approximately normal distribution; therefore, parametric tests were applied for comparisons at the subdimension level (Student's *t*-test for two-group comparisons and one-way ANOVA for comparisons involving three or more groups). Significant results were followed by appropriate post-hoc tests (Dwass–Steel–Critchlow–Fligner or Tukey). An exploratory multiple linear regression analysis was conducted using the DDOSI total score as the dependent variable to assess whether selected demographic and social media–related variables jointly predicted overall orthodontist selection preferences. The overall model was not statistically significant; therefore, the regression findings were not emphasized further.

A significance level of $\alpha = 0.05$ was applied throughout, with results reported as $p < 0.001$, $p < 0.01$, and $p < 0.05$. All analyses were performed using IBM SPSS Statistics 24.0, Jamovi 2.4, Microsoft Excel 2016, and RStudio 2023.09.0.

Results

Socio-Demographic Characteristics of Participants

A total of 180 adolescent patients were included in this study. The sample consisted of 122 females and 58 males, with a mean age of 14.7 ± 1.87 years (range: 11–18 years). Regarding educational status, 42.2% of participants were middle school students, 56.7% were high school students, and 1.1% were university students (Table 2).

Overall, 7.2% of participants had at least one parent who was a healthcare professional. Parental education levels and household income distribution are presented in Table 3.

The average daily time participants spent on digital platforms was 3 ± 1.01 hours. Regarding digital platform preference, Google was the most frequently used platform (41.1%, n = 74), followed by Instagram (28.3%, n = 51), YouTube (22.2%, n = 40), TikTok (5%, n = 9), X (2.8%, n = 5), and Snapchat (0.6%, n = 1). A total of 75.6% (n = 136) indicated that they sought health-related information online. Similarly, 57.2% (n = 103) reported researching aesthetic procedures they were interested in. The most frequently used digital information source for health- and aesthetics-related information was Google (55.1%, n = 99), followed by Instagram (15.8%, n = 53), YouTube (22%, n = 74), TikTok (4.5%, n = 15), X (2.4%, n = 8) and Twitch (0.3%, n = 1). Finally, 37.8% (n = 68) of participants reported making the decision to seek orthodontic treatment on their own, whereas 62.2% (n = 112) stated that the decision was made jointly with their families (Table 4).

The ages of participants who most frequently used Google, YouTube, and Instagram were 14.36 ± 1.91, 14.55 ± 1.78, and 15.20 ± 1.82 years, respectively. Age differed significantly according to the most frequently used digital information

Table 2 Demographic and Educational Characteristics of the Participants

Variable	Category	Value
Gender	Male	58 (32.2%)
	Female	122 (67.8%)
Age (years)	Mean ± SD	14.7 ± 1.87
	Minimum–Maximum	11–18
Educational Status	Middle school student	76 (42.2%)
	High school student	102 (56.7%)
	University student	2 (1.1%)

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Table 3 Sociodemographic Characteristics of Participants' Families

Variable	Category	n	%
At least one parent is a healthcare professional	Yes	13	7.2
	No	167	92.8
	Total	180	100.0
Mother's highest level of education	Illiterate	9	5.0
	Primary school	68	37.8
	Middle school	29	16.1
	High school	46	25.6
	University	20	11.1
	Postgraduate/Doctorate	8	4.4
	Total	180	100.0
Father's highest level of education	Illiterate	2	1.1
	Primary school	58	32.2
	Middle school	28	15.6
	High school	63	35.0
	University	24	13.3
	Postgraduate/Doctorate	5	2.8
	Total	180	100.0
Household income status	Income less than expenses	46	25.6
	Income equal to expenses	112	62.2
	Income greater than expenses	22	12.2
	Total	180	100.0

Table 4 Digital Platform Use Habits and Health Information -Seeking Behaviors

Variable	Category	n	%
How many hours per day do you use digital platforms on average?	1–2 hours	51	28.3
	3 hours	79	43.9
	4–5 hours	50	27.8
	Total	180	100.0
Which digital platform do you use most frequently?	Google	74	41.1
	Instagram	51	28.3
	YouTube	40	22.2
	X (Twitter)	5	2.8
	TikTok	9	5.0
	Snapchat	1	0.6
	Total	180	100.0
Do you search online for information about health problems and treatments?	Yes	136	75.6
	No	44	24.4
	Total	180	100.0
Do you search online for information about aesthetic procedures?	Yes	103	57.2
	No	77	42.8
	Total	180	100.0
Which digital information sources do you use when searching for health- and aesthetics-related information? *(You may select more than one option)*	Google	185	55.1
	Instagram	53	15.8
	YouTube	74	22.0
	X (Twitter)	8	2.4
	TikTok	15	4.5
	Twitch	1	0.3
	Total	336	100.0

(*Continued*)

Table 4 (Continued).

Variable	Category	n	%
Who was most influential in making the orthodontic treatment decision?	My own decision	68	37.8
	Together with my family	112	62.2
	Total	180	100.0

source (H = 7.148, $p < 0.05$), with Instagram users being significantly older than Google users, while the YouTube group did not differ significantly from either. The age of participants who searched online for aesthetic procedures was 14.97 ± 1.87 years, compared with 14.36 ± 1.84 years among those who did not, and this difference was statistically significant (U = 3221.5, $p < 0.05$). Similarly, participants who reported making the orthodontic treatment decision on their own were older than those who made the decision together with their family, with ages of 15.32 ± 1.83 and 14.34 ± 1.81 years, respectively (U = 2645.5, $p < 0.001$) (Table 5).

No statistically significant differences were observed between genders or between participants with and without a parent who is a healthcare professional in terms of digital platform use and health information–seeking behaviors.

Participant responses across the five conceptually defined DDOSI dimensions demonstrated statistically significant group differences.

Regarding gender, male participants assigned higher importance than females to the orthodontist's "appearance of the teeth and smile," "provision of educational courses," "possession of special or patented products," and "professional certificates and awards." In contrast, female participants placed greater emphasis on the "cleanliness of the clinic." Additionally, the "central location of the clinic" was rated as more important by male participants ($p < 0.05$).

Decision-making status also influenced preferences. Participants who made the orthodontic treatment decision jointly with their families placed greater importance on the orthodontist's "physical attractiveness" and "dental and smile esthetics" compared to those who made the decision independently. In contrast, participants who made the decision on their own rated "recommendations of the orthodontist/clinic by high-follower social media accounts" as more important than those who decided together with their families ($p < 0.05$).

With respect to parental occupation, adolescents with at least one parent who is a healthcare professional assigned greater importance to the orthodontist's "personal image," whereas they assigned less importance to the clinic being "close to home or on the commuting route" compared with those whose parents were not healthcare professionals ($p < 0.05$).

Table 5 Digital Platform Use Habits and Health Information Seeking Behaviors by Age

Variable	Level	Age		U/H	p
		Mean ± SD	Median (IQR)		
Most frequently used digital platform	Google	14.36 ± 1.91[a]	14 (3.0)	7.148	*0.028*
	YouTube	14.55 ± 1.78[ab]	15 (3.0)		
	Instagram	15.20 ± 1.82[b]	15 (3.0)		
	Total	14.71 ± 1.87	15 (3.0)		
Searching online for aesthetic procedures	Yes	14.97 ± 1.87[a]	15 (2.0)	3.221.5	*0.030*
	No	14.36 ± 1.84[b]	14 (3.0)		
	Total	14.71 ± 1.87	15 (3.0)		
Main influence on orthodontic treatment decision	Own decision	15.32 ± 1.83[a]	16 (3.0)	2.645.5	*<0.001*
	Together with family	14.34 ± 1.81[b]	14 (3.0)		
	Total	14.71 ± 1.87	15 (3.0)		

Notes: Groups sharing at least one common superscript letter (a, b) are not significantly different from each other, whereas groups with different superscript letters differ significantly ($p < 0.05$).

Abbreviations: U, Mann–Whitney U; H, Kruskal–Wallis H; IQR, Interquartile range; SD, Standard deviation.

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Table 6 Items Considered Most Important by Participants When Selecting an Orthodontist or Clinic

Item	n	%
Cleanliness of the clinic	122	22.7
High confidence/professional enthusiasm of the orthodontist	50	9.3
Use of up-to-date technological equipment	41	7.6
Academic title of the orthodontist	38	7.1
The clinic being located in a central area	24	4.5
Presence of before-and-after treatment photographs on the clinic's social media account	24	4.5
Presence of practitioners from different dental specialties within the clinic	24	4.5
Years of professional experience of the orthodontist	23	4.3
Certificates and awards held by the orthodontist	16	3.0
Recommendations from friends or acquaintances regarding the clinic	14	2.6
Other	161	30.0
Total	**537**	**100.0**

Notes: Participants were asked to select the three factors they considered most important; therefore, multiple responses per participant were included in the table.

Parental education level was likewise associated with differing priorities. Participants with at least one university-educated parent rated more highly the orthodontist's "appearance of the teeth and smile," "participation in professional congresses," "ownership of special or patented products," and "professional certificates and awards." They also assigned greater importance to clinic-related factors such as the availability of clear aligner treatment, orthognathic surgery, and use of up-to-date technology, as well as social media factors such as the presence of informative videos about the orthodontist on the clinic's account ($p < 0.05$).

Socioeconomic status further influenced preferences. Participants from higher-income households placed greater importance on "television appearance posts," "Google ratings and reviews," and "patient testimonials on social media" compared with those from lower or middle-income groups ($p < 0.05$).

Daily usage patterns were also associated with participants' preferences. Those using digital platforms for 1–2 hours daily placed greater importance on orthodontists' participation in professional congresses than participants using them for approximately 3 hours per day ($p < 0.05$).

Health information-seeking behavior further influenced responses. Participants who did not search online for health or treatment-related information rated the "size of the clinic," the presence of "political, national or religious commemorative posts" and "entertaining content" on social media, the "number of clinic staff," and "personal photos of the orthodontist engaging in sports or artistic activities" as more important than those who reported seeking such information online ($p < 0.05$).

Participants who searched for aesthetic procedures online placed greater importance on advanced clinical services and digital content, including orthognathic surgery, modern technology, educational posts, before-and-after images, and patient reviews ($p < 0.05$).

Platform-based differences were also observed. Instagram users placed greater importance on professional experience, visual treatment outcomes, and patient reviews compared with YouTube users. They also valued Google ratings more highly. In contrast, Google users assigned greater importance to participation in scientific events than YouTube users ($p < 0.05$).

Participants' Top-Ranked Criteria in Orthodontic Provider Selection

When participants were asked to identify the three most important factors in selecting an orthodontist, clinic cleanliness emerged as the most frequently prioritized factor, accounting for 22.7% (n = 122) of responses. This was followed by the orthodontist's high confidence and professional enthusiasm (9.3%, n = 50), use of up-to-date technological equipment (7.6%, n = 41), and academic title (7.1%, n = 38). All remaining factors accounted for less than 5% of responses (Table 6).

Discussion

Principal Findings

The present study evaluated the determinants of orthodontist selection among adolescents, with particular attention to digital information sources. The findings indicate that while digital platforms are widely used, orthodontist selection is shaped by a combination of digital and traditional factors rather than a single dominant influence. Clinical and professional indicators remained central in adolescents' evaluations, with digital content acting as a complementary source of information.

Among all evaluated criteria, clinic cleanliness emerged as the most influential factor in orthodontist selection. This was followed by indicators related to professional competence, such as confidence, technological infrastructure, and academic qualifications. These findings suggest that, despite extensive exposure to digital content, adolescents continue to rely on observable indicators of clinical quality when evaluating healthcare providers.

Age-related differences further highlight the complexity of adolescents' decision-making processes. Younger adolescents appeared to rely more on general information and entertainment-oriented content, whereas older adolescents showed greater interest in treatment-specific features, particularly clear aligner therapy. In addition, decision-making tended to be more family-centered among younger participants.

Comparison with Previous Studies

The widespread use of digital information sources among adolescents observed in this study is consistent with previous findings in orthodontic research. Papadimitriou et al reported that patients frequently use social media to obtain information about orthodontic treatments, compare treatment alternatives, and review other patients' experiences, with platforms such as Instagram, YouTube, and Facebook emerging as dominant sources of information.[20] Similarly, the present study found that adolescents frequently rely on digital platforms, particularly Google and Instagram, when seeking information related to orthodontic treatment.

Previous studies examining orthodontic content on social media have consistently emphasized the dominance of aesthetic narratives. In an Instagram content analysis, Büyük et al reported that orthodontic posts produced by both clinicians and patients primarily focus on aesthetic outcomes, with before-and-after images representing the most common type of content.[21] Similarly, Siddiqui et al found that orthodontic patients frequently encounter orthodontic information on social media and show particular interest in visual treatment outcomes and short educational videos.[22] The high level of interest in clear aligner therapy observed in the present study is consistent with these findings and reflects the strong visual appeal of aesthetic treatment modalities on social media platforms.

Diniz et al suggested that social media may influence not only the selection of orthodontists but also the acceptance of different orthodontic treatment options.[24] Aesthetic treatment modalities, such as clear aligners, may become more readily accepted through their widespread visibility on social media platforms. The results of the present study largely align with this observation. In particular, the greater importance attributed by older adolescents to the availability of clear aligner therapy suggests that social media narratives emphasizing aesthetics and "invisible treatment" may shape adolescents' expectations regarding orthodontic care. At the same time, the findings of this study indicate that the influence of digital information sources is moderated by factors such as age, family involvement, and socioeconomic conditions.

The relationship between patient preference and treatment adherence is especially relevant in orthodontics, as treatment success depends heavily on sustained patient cooperation, including consistent appliance use, maintenance of oral hygiene, and regular attendance at follow-up appointments. Although preference cannot be equated directly with adherence, previous studies have shown that the development of treatment preferences may influence motivation and trust. Sun et al, for instance, reported that clinicians' communication behaviors in digital environments can affect patients' treatment adherence.[18] In this context, adolescents' prioritization of observable indicators of clinical quality - such as cleanliness and technological adequacy- may reflect a trust-based evaluative framework that could support long-term cooperation during treatment.

The multidimensional structure of the DDOSI employed in this study indicates that adolescents evaluate orthodontist preferences across several cognitive domains, including professional identity, clinical environment, informational content, visibility, and credibility. Accordingly, orthodontist selection through digital platforms appears to be shaped by

multiple interacting factors rather than a single determinant. The non-significant regression model further supports the multifactorial nature of orthodontist selection among adolescents.

Analyses of the DDOSI further revealed notable differences across demographic and behavioral subgroups. Male participants placed greater emphasis on indicators of professional achievement such as certificates, awards, and proprietary or patented products, whereas female participants attached greater importance to aspects of the clinical environment, particularly cleanliness. In addition, parental education level and socioeconomic status were found to influence the extent and nature of social media's impact. Adolescents from families with higher levels of education and income were more likely to prioritize evaluative criteria such as professional qualifications, advanced technological infrastructure, and online patient reviews. These findings suggest that the influence of digital platforms is not uniform across all patient groups but rather interacts with broader social and cultural contexts.

Interpretation of Findings

While previous studies have emphasized the role of aesthetic content in shaping orthodontic preferences, the present findings suggest that adolescents' decision-making processes are more complex than a purely appearance-driven model would imply. Although aesthetic treatment options -such as clear aligners- were highly valued, adolescents in this study prioritized clinic cleanliness and professional credibility above purely visual or promotional elements.

This observation indicates that social media may function less as a direct determinant of treatment decisions and more as a contextual influence that may contribute to perceptions of professional competence and trustworthiness. Adolescents appear to interpret social media content through an evaluative framework that incorporates both digital impressions and tangible indicators of clinical quality.

The findings related to professional boundaries on social media also support this interpretation. Previous studies demonstrate that professional and educational posts enhance perceived credibility, whereas excessive personal content may undermine professional trust.[13,23] The present study similarly found that adolescents who seek health-related information online attach greater importance to educational videos, treatment explanations, and patient experiences than to posts related to clinicians' personal lives. This pattern suggests that adolescents are capable of distinguishing between professional and nonprofessional content within digital environments.

Another important dimension revealed in this study concerns the moderating role of family dynamics and socio-economic factors. Adolescents from families with higher educational and socioeconomic backgrounds were more likely to evaluate orthodontists according to professional credentials, technological infrastructure, and online patient reviews. These findings indicate that the influence of social media is not uniform across patient groups but interacts with broader social and cultural contexts.

Clinical and Practical Implications

The results of this study have several practical implications for orthodontic practice. First, the findings suggest that social media should not be viewed solely as a marketing platform but rather as a component of professional communication with patients. Adolescents appear to value educational and treatment-related content that enhances their understanding of orthodontic procedures.

Second, maintaining professional boundaries in digital environments appears to be particularly important when communicating with adolescent audiences. Content that emphasizes clinical expertise, treatment explanations, and patient education may strengthen perceptions of trust and credibility, whereas overly personal or lifestyle-oriented posts may reduce professional legitimacy.

Finally, the continuing importance of traditional clinical indicators, such as hygiene standards and technological infrastructure- highlights that digital visibility cannot substitute for perceived clinical quality. Orthodontists who integrate professional digital communication with high standards of clinical care may therefore be better positioned to establish trust among adolescent patients.

Strengths and Limitations

This study has several strengths. One of its main contributions lies in its exclusive focus on adolescents, who represent the primary recipients of orthodontic treatment but remain under-represented in existing research examining social media influences. The use of a comprehensively developed multidimensional measurement instrument with high internal consistency (Cronbach's $\alpha > 0.930$) also represents an important methodological strength; however, the sample size was below the commonly accepted item-to-sample recommendations for factor analysis, and the very high alpha value may also suggest some degree of item redundancy or content overlap, both of which should be taken into consideration when interpreting the factor structure. Furthermore, the inclusion of detailed sociodemographic variables and digital behavior indicators enabled more nuanced subgroup analyses.

Nevertheless, several limitations should be acknowledged. The single-center design and relatively small sample size may limit the generalizability of the findings. In addition, the reliance on self-reported responses introduces the possibility of recall bias and social desirability bias. Future multicenter studies involving larger and more diverse populations may provide a clearer understanding of the causal mechanisms underlying the influence of social media on adolescents' orthodontic decision-making processes.

At the time of data collection, widely accessible conversational AI tools were primarily based on earlier-generation models and were not yet widely integrated into health information-seeking behaviors. In addition, these systems had limited capacity to provide consistent, up-to-date, and locally relevant information about healthcare providers, which may have restricted their usefulness in provider selection.

Despite these limitations, the findings of this study indicate that digital platforms have become an integral component of adolescents' orthodontic decision-making. However, their influence operates in conjunction with traditional determinants of professional trust and clinical quality rather than replacing them.

Conclusion

Although digital information sources play a role in adolescents' health-related decision-making processes, they are not the sole determining factor. Instead, they function primarily as a supportive and complementary source of information. Adolescents who search for information about aesthetic procedures through digital platforms tend to value educational content, patient reviews, and visual materials. However, increased time spent on social media does not necessarily lead to more informed or more professionally oriented choices.

The findings also highlight the important role of family involvement in adolescents' decision-making processes. Adolescents who make treatment decisions together with their families tend to give greater importance to factors related to aesthetics and physical appearance, whereas those who make decisions more independently appear to be more responsive to recommendations from highly followed social media accounts. In addition, adolescents from families with higher levels of education and income tend to place greater emphasis on professional qualifications, the availability of advanced treatment options, technological infrastructure, and online patient reviews.

Overall, digital information sources play an important—but not exclusive—role in adolescents' selection of orthodontists and clinics. While they can support perceptions of professional trust, traditional professional criteria such as clinical quality and professional competence remain the primary determinants. Therefore, orthodontists should approach social media not merely as a marketing platform but as a digital extension of clinical practice that incorporates ethical, professional, and educational responsibilities.

Disclosure

The authors report no conflicts of interest in this work.

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