Influence of Social Media on the Indian Population’s Perception of Orthodontic-Related Posts: A Mixed Method Analysis

Tarulatha R Shyagali, Ayesha Rathore, Abhishek Gupta, Anil Tiwari, Shanya Kapoor and Payal Goyal

Abstract

Introduction: In little more than a decade, social media has gone from being an entertainment source to a fully integrated part of nearly every aspect of daily life. This study aimed to provide an insight into how orthodontics-related social media posts are looked upon by the Indian population.

Material and Methods: Orthodontics-related social media posts were analyzed for the number of likes, shares, and comments. Comments were also scrutinized for determining whether they were appreciation comments or enquiries related to orthodontic treatment and procedure. Posts were collected from 3 platforms: Twitter, Facebook, and Instagram. A mixed-methods approach was applied. First, all posts were structured according to a quantitative content analysis. Subsequently, qualitative analysis was performed to detect potential differences between the quality of response to posts on Twitter, Facebook, and Instagram. Using one-way ANOVA test, differences in the data were tabulated. A Chi-Square test was used to analyze the qualitative differences in the comments, which were scrutinized to check if they were appreciation comments or enquiries/doubts related to the posts.

Results: There was a significant difference between the numbers of likes, shares, and comments. Appreciation comments were more in number than enquiries. Instagram had the maximum number of likes, followed by Facebook and Twitter (P < .00001), Facebook had more shares in comparison to Twitter. Upon an analysis done on the number of comments, Facebook was found to have the highest number of comments, followed by Instagram and Twitter. All the results were significant, with P < .00001.

Conclusion: It can be concluded that social media awareness related to orthodontics posts among Indians is gaining pace, and a lot can be achieved using these social media platforms to spread awareness related to orthodontic treatment.

Keywords
Social media, orthodontics, Instagram, Facebook, Twitter

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Introduction

Information and communication technology has changed rapidly over the past 20 years, with a key development being the emergence of social media. Social media has gone from being an entertainment source to a fully integrated part of nearly every aspect of daily life for many.

India has embraced social media with open arms. It is estimated that by December 2020 there will be around 639 million active Internet users in India. What started with just a simple email correspondence has expanded into a digital universe, with social networking giants like Facebook, Instagram, Twitter, etc.

Social media is characterized by a proliferation of web applications that facilitate collaborations between users. These interactions can occur through reviews, comments, user-generated content, and content sharing.

1 Department of Orthodontics and Dentofacial Orthopedics, Hitkarini Dental College and Hospital, Jabalpur, Madhya Pradesh, India

Corresponding author:
Tarulatha R Shyagali, Department of Orthodontics and Dentofacial Orthopedics, Hitkarini Dental College and Hospital, Jabalpur, Madhya Pradesh, India.
E-mail: drtarulatha@gmail.com

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In modern healthcare, social media has become increasingly important for professionals. Social networks offer a means of leveraging what is special about one’s orthodontic practice; good patient relationships, team culture, and sharing of insightful content. Social networks are not only an easier and cheaper way to advertise one’s practice, but they also help draw new patients and transform current patients into brand supporters. Creating and posting insightful content on one’s social media accounts is the key.

Across different social media platforms, Facebook has hundreds of millions of followers. While Twitter was widely popular a few years ago, newer social media, such as Instagram, are rising in popularity. The number of studies on how these social media platforms influence the perception of people in India on orthodontics is negligible. Thus, the current study was taken up with an aim to provide an insight into how orthodontics-related social media posts are looked upon by the Indian population, taking into account the number of likes, shares, and comments on such posts on Facebook, Instagram, and Twitter.

**Material and Methods**

A descriptive cross-sectional study was conducted over a period of 30 days. Orthodontics-related social media posts were collected from Facebook, Instagram, and Twitter using the content analysis method. All the social media platforms were searched within the framework of set selection criteria.

The following were the inclusion criteria:

- Indian social media posts; and
- Social media posts that had pre- and post-orthodontic treatment pictures.

The following were the exclusion criteria:

- Posts from orthodontists who are not from India;
- Posts in languages other than English;
- Advertisements from orthodontists; and
- Posts that had been reposted by the same or another user.

The search was executed using the terms and phrases like “Indian Orthodontist Page,” “Indian Orthodontics Page,” “Indian Orthodontics Study group,” “Indian Orthodontic Society Page,” “Indian Orthodontist,” and “Indian Orthodontic Clinic.” The same search strategy was utilized for search execution across all the social media platforms. A total of 300 posts were scanned initially; out of these, 80 were advertisements and 70 were out of context, and so these posts were excluded from the study. Finally, a total of 150 posts were collected, 50 each from the 3 platforms (Figure 1).

A mixed-methods research approach was used to scrutinize the posts, that is, the posts were analyzed both quantitatively and qualitatively. First, the posts were analyzed quantitatively for the number of likes, shares, and comments. Then, the comments were analyzed qualitatively for the content. Depending on the content, the comments was categorized into appreciation comments or enquiries/doubts. “Thank You” comments by the poster on appreciation comments were excluded. Similarly, replies by the poster to enquiries or doubt comments were also excluded.

The data thus collected were fed into a Microsoft Excel spreadsheet (version Microsoft Office Professional Plus 2019). The difference between the different social media platforms in terms of number of likes, shares, and comments was analyzed using a one-way ANOVA test. A Chi-Square test was used to analyze the qualitative differences in the comments. The P-value was set at <.5 for significance. SPSS software version 22 was used to perform all the statistical analysis.

**Results**

Table 1 shows the summary of the data for number of likes, shares, and comments across the various social media platforms. Instagram had the highest number of likes on posts (62%), and Facebook had the highest percentage of shares (91%) and comments (71%) on the posts, whereas Twitter remained the least used medium, with 0 likes.

| Parameter       | Facebook (%) | Instagram (%) | Twitter (%) |
|-----------------|--------------|---------------|-------------|
| Likes           | 38           | 62            | 0           |
| Shares          | 91           | 0             | 9           |
| Comments        | 71           | 28            | 1           |
| Appreciating    | 82.5         | 90.5          | 87.5        |
| Enquiry comments| 17.5         | 9.5           | 12.5        |

Figure 1. Sample Selection.
Table 2 represents the comparison of the number of likes among the three social media platforms. The results depict that Instagram had the maximum number of likes, followed by Facebook and then Twitter. The difference noted was statistically highly significant \( P < .00001 \).

The comparison of number of shares across the three social media platforms is shown in Table 3. As Instagram does not have the facility to see the number of shares on a post, the analysis was performed only on the data obtained from Facebook and Twitter. Facebook had a lot of shares in comparison to Twitter, and the difference noted was statistically significant, with \( P = .003637 \).

The results for the analysis of the number of comments showed that Facebook had the highest number, followed by Instagram and then Twitter, and again the difference noted was statistically highly significant, with \( P < .00001 \). The same is shown in Table 4.

Data related to appreciation comments and enquiries are presented in Table 5. Appreciation comments were significantly higher in number when compared to the number of enquiry comments. Overall, Facebook had the highest number of appreciation comments compared to Instagram and Twitter. The difference seen among the different social media platforms in terms of the appreciation comments was statistically significant, with \( P = .023531 \).

### Table 2. One-Way ANOVA Test for the Number of Likes on Instagram, Facebook, and Twitter.

| Social Media Platform | N  | ∑X | Mean | Std. Dev. | Mean ± S.D. | F         | P-value |
|-----------------------|----|----|------|-----------|-------------|-----------|---------|
| Twitter               | 50 | 27 | 0.54 | 2.4345    | 0.54 ± 2.4345 | 45.36301  | <.00001*|
| Instagram             | 50 | 7050 | 141 | 101.1521  | 141 ± 101.1521 |           |         |
| Facebook              | 50 | 4344 | 86.88 | 79.7349  | 86.88 ± 79.7349 |           |         |
| Total                 | 150 | 11421 | 76.14 | 93.9459  | 76.14 ± 93.9459 |           |         |

**Note:** *Significant at \( P < .05 \).*

### Table 3. One-Way ANOVA Test for the Number of Shares on Instagram, Facebook, and Twitter.

| Social Media Platform | N  | ∑X | Mean | Std. Dev. | Mean ± S.D. | F         | P-value |
|-----------------------|----|----|------|-----------|-------------|-----------|---------|
| Twitter               | 50 | 18 | 0.36 | 1.0451    | 0.36 ± 1.0451 | 5.83664  | .003637* |
| Instagram             | 50 | 0  | 0    | 0         | 0           |           |         |
| Facebook              | 50 | 188 | 3.76 | 10.4658   | 3.76 ± 10.4658 |           |         |
| Total                 | 150 | 206 | 1.373 | 6.2665   | 1.373 ± 6.2665 |           |         |

**Note:** *Significant at \( P < .05 \).*

### Table 4. One-Way ANOVA Test for the Number of Comments on Instagram, Facebook, and Twitter.

| Social Media Platform | N  | ∑X | Mean | Std. Dev. | Mean ± S.D. | F         | P-value |
|-----------------------|----|----|------|-----------|-------------|-----------|---------|
| Twitter               | 50 | 7  | 0.14 | 0.4953    | 0.14 ± 0.4953 | 28.33654  | <.00001* |
| Instagram             | 50 | 219 | 4.38 | 3.9687    | 4.38 ± 3.9687 |           |         |
| Facebook              | 50 | 555 | 11.1 | 12.0699   | 11.1 ± 12.0699 |           |         |
| Total                 | 150 | 781 | 5.207 | 8.583    | 5.207 ± 8.583 |           |         |

**Note:** *Significant at \( P < .05 \).*

### Table 5. Comparison of Appreciation and Enquiry Comments on Instagram, Facebook, and Twitter.

| Social Media Platform | Appreciating Comments | Enquiry Comments | Total | P-value |
|-----------------------|-----------------------|-----------------|-------|---------|
| Twitter               | 7                     | 1               | 8     | .023531* |
| Instagram             | 190                   | 20              | 210   |         |
| Facebook              | 458                   | 97              | 555   |         |
| Total                 | 655                   | 118             | 773   |         |

**Note:** *Significant at \( P < .05 \).*
Discussion

As Kevin Werbach said, “Social media has become really fundamental to the way that billions of people get information about the world and connect with each other, which raises the stakes enormously.” Social media has massively expanded its wings over every field of life. The medical and dental professions have not been left far behind.

The existing literature on orthodontics in social media is really limited, with only a handful of studies with diverse intentions. Although the role of social media in healthcare is viewed with some controversy, the popularity of social media is increasing day by day owing to the ease of obtaining information with a single click and the current tech-savvy generation’s preference for such media over anything else. Clinical orthodontic photography is an important and essential skill that an orthodontist should master. It not only is part of case history or record-keeping but also has come in quite handy when one wants to educate patients, during peer presentations, in marketing, and in obtaining additional certification. It is an integral part of social media campaigning by orthodontists, and most often, the posts in the form of photographs receive more attention than verbal posts. Accordingly, the scope of the current study was to examine the effect of orthodontic-related social media posts on the Indian population, and the goal was to assess the number of likes, shares, and comments on orthodontics-related social media posts on Facebook, Instagram, and Twitter.

An earlier study that was done to explore the use of social media platforms by orthodontic patients provides insights into the experiences, attitudes, and emotions of patients and their peers regarding orthodontics. Most often, pictures and emoticons were used by the patients to express emotions related to orthodontic treatment on social media platforms. The results of the current study indicate that in India, Instagram had more likes on orthodontics-related posts than any other social media platform. However, Facebook had more comments, of which appreciation comments were more than enquiries or doubts. Around 555 comments were posted on Facebook, followed by Instagram with 219 comments and Twitter with only 7 comments. This is a great insight, as this shows the positive orientation of people toward the field of orthodontics. Similar results were noted in the earlier systemic review, where positive feelings were expressed more commonly than negative feelings, with positive feelings ranging from enthusiasm, self-esteem, and pleasure to excitement about the aesthetic result and excitement after braces removal. Henzell et al reported that in New Zealand, 80.8% of orthodontics patients used social media platforms, with Facebook being the most preferred platform. They also reported that only 13.3% of the patients had posted comments about orthodontics on social media platforms. This finding is similar to the result of our study. One more interesting fact was that only 6.7% had thought of obtaining information related to orthodontics through social media platforms, with 81% of the people preferring to obtain the information directly from the orthodontist. Similar results were also reported by Graf et al, who found that there existed a significant difference between the posts on Twitter and Instagram, with Instagram showing more positive posts related to orthodontics than Twitter. They emphasized the need to understand the basic functionality of these two platforms. In the present study, when the content analysis was performed across the various social media platforms for the search terms like “Indian orthodontic clinics,” “Indian orthodontists,” etc, the information obtained on each platform was quite different (Figure 2). Instagram, for example, had more patient experiences-related posts, followed by shares of pre- and post-orthodontic treatment pictures. However, Twitter had more patient reviews on treatment and orthodontics-related advertisement. Facebook showed the maximum sharing of pretreatment and posttreatment photos, followed by posts asking for suggestions for treatment plan and enquiries or doubts about treatment procedure.

An earlier study on social media published in a reputed journal of orthodontics enlists the five most influential social media tools: Twitter, YouTube, practice blogs, Facebook, and Google Places. However, a recent systemic review on social media and orthodontic treatment revealed that orthodontic patients preferred social media platforms in the following order: Twitter, YouTube, Facebook, Google+, Pinterest, and Instagram. The findings seem to be in agreement with the results of our study, with Facebook and Instagram being the popular media platforms; however, the present study did not include the other platforms such as YouTube, Google+, and Pinterest.

Twitter is not popular among the Indian population, and so there were not many comments or likes on orthodontics-related social media posts. The reason might be the slow gain in the usage of Twitter microblogging by Indians because of the lack of Internet facilities in remote areas in the country or

![Figure 2. Social Media Influence.](image)
Social media seems to have all the benefits that one desires for patients, but one should not forget the ill effects of social media, which might range from reduced care toward one’s well-being, addiction to their usage, loss of privacy, and the danger of becoming an easy target of the promotional activities of companies. Keeping these things in mind, one should use social media platforms judiciously. In the current study, search engine platforms and YouTube-related information were not assessed for orthodontics-related blogs and posts. Thus, the study carries the scope to explore the impact of orthodontics-related blogs and posts on orthodontics patients or potential patients. The literature available on the influence of social media platforms on the perception of orthodontic treatment per se was scant, and in India, this study was the first of its kind, and so it was difficult to compare the results of the current study with other similar ones.

**Conclusion**

Social media constitute one of the best platforms to spread and educate the general population about malocclusion and orthodontic treatment. Effective usage of them can increase the awareness of people about the different orthodontic treatment modalities, and they also can act as a myth-buster and fact-checker for the interested public. Facebook and Instagram are the most used platforms in India, and Twitter seems to be gradually gaining popularity.

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**Statement of Informed Consent and Ethical Approval**

Necessary ethical clearances and informed consent was received and obtained respectively before initiating the study from all participants.

**ORCID iD**

Tarulatha R Shyagali https://orcid.org/0000-0001-8220-9307

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