

# Evaluation of Social Media Usage by Dental Practitioners of Pakistan for Professional Purposes – A Cross-Sectional Study

Dinaz Ghandhi<sup>1</sup>, Nikita Bodani<sup>1</sup>, Abhishek Lal<sup>1</sup>, Afsheen Maqsood<sup>2</sup>, Naseer Ahmed<sup>3</sup>, Sakeenabi Basha<sup>4</sup>, Ali A Assiry<sup>5</sup>, Artak Heboyan<sup>6</sup>, Mohmed Isaqali Karobari<sup>7,8</sup>

<sup>1</sup>Department of Oral and Maxillofacial Surgery, Altamash Institute of Dental Medicine, Karachi, Sindh, Pakistan; <sup>2</sup>Department of Oral Pathology, Bahria University Dental College, Karachi, Sindh, Pakistan; <sup>3</sup>Department of Prosthodontics, Altamash Institute of Dental Medicine, Karachi, Sindh, 75500, Pakistan; <sup>4</sup>Department of Community Dentistry, Faculty of Dentistry, Taif University, Taif, 21944, Saudi Arabia; <sup>5</sup>Preventive Dental Science Department, Faculty of Dentistry, Najran University, Najran, 55461, Kingdom of Saudi Arabia; <sup>6</sup>Department of Prosthodontics, Faculty of Stomatology, Yerevan State Medical University, Yerevan, 0025, Armenia; <sup>7</sup>Department of Restorative Dentistry & Endodontics, Faculty of Dentistry, University of Puthisastra, Phnom Penh, 12211, Cambodia; <sup>8</sup>Conservative Dentistry & Endodontics, Saveetha Dental College & Hospitals, Saveetha Institute of Medical and Technical Sciences University, Chennai, Tamil Nadu, 600077, India

Correspondence: Ali A Assiry, Preventive Dental Science Department, Faculty of Dentistry, Najran University, Najran, 55461, Kingdom of Saudi Arabia, Email [assirypedo@gmail.com](mailto:assirypedo@gmail.com); Mohmed Isaqali Karobari, Department of Restorative Dentistry and Endodontics, Faculty of Dentistry, University of Puthisastra, Phnom Penh, 12211, Cambodia, Email [dr.isaq@gmail.com](mailto:dr.isaq@gmail.com)

**Background:** In the past couple of years, the use of social media has been on a tremendous rise with greater attention in the field of healthcare, including dentistry. The use of social media for professional purposes is emphasized as unprofessional use can be detrimental. This study aims to evaluate the use of social media by dentists for professional purposes.

**Materials and Methods:** This cross-sectional study was carried out between December 2021 and March 2022. An online questionnaire was formulated using Google Forms and distributed to the dental professionals through various social media platforms such as Twitter®, Facebook®, Instagram®, Snapchat®, WhatsApp®, and Email®. The questionnaire consisted of two parts: demographic characteristics and questions about the use of social media for professional purposes. For data analysis, SPSS version 25.0 was used, where a multiple linear regression test was used to compare the responses of the participants with their demographic characteristics. A p-value of  $\leq 0.05$  was considered to be statistically significant.

**Results:** A total of 404 dentists participated in this study with a response rate of 89.7%. The majority of the 276 (68.3%) dentists believed to have a professional account to use social media for professional purposes. Most of the 280 (69.3%) dentists agreed social media improved knowledge and communication skills with the patients. About 248 (61.4%) dentists considered the use of social media for general purposes during clinical hours led to wastage of time. About 160 (39.6%) dentists considered connecting with patients on social media to be inappropriate.

**Conclusion:** The use of social media is on the rise at a tremendous rate in different fields of work, including dentistry. Social media is a great tool for dentists to help expand and grow their clinical practice. However, the professional use and ethics whilst using social media should be considered by the dentists.

**Keywords:** social media, dentists, dental, healthcare, professionalism

## Introduction

Ever since the establishment of social media, the way people communicate and share information with each other has drastically changed. People all over the world use social media to look for different services such as doctors, restaurants, salons, education institutes, and much more. Social media is a platform that is available on multiple electronic devices such as mobile phones, laptops, computers, and tablets. Presently, the most common and popularly used social media platforms are Facebook®, Instagram®, Twitter®, Snapchat®, YouTube®, and WhatsApp®, respectively.

Initially, social media was primarily used for the people to communicate with each other such as sharing their lives, and important events, however, nowadays it has been a platform for education, marketing, business, and advertisements. In Pakistan, currently, there are about 71.70 million social media users.<sup>1</sup> Presently, more and more dentists are engaged in the use of social media for different purposes such as imparting and gaining knowledge, advertising their clinical practice, and at times being a source for online consultations.<sup>2</sup> Moreover, social media is evolving each day as a platform that enhances learning and connecting, professionally, with other fellow dental colleagues. Social media provides a multifarious platform whereby dentists make blogs and provide a visual representation of their clinical work that provides information to their current and future prospective patients.<sup>3</sup> Moreover, dental professionals also organize various workshops and lectures that are advertised on social media to invite fellow dental professionals to attend them. Students also have the opportunity to learn more about dentistry as a career and the current dental students learn different skills and knowledge from their teachers and fellows. Furthermore, the use of social media for online education has particularly increased due to the COVID-19 pandemic situation to curb the rate of infectivity of the virus.<sup>4</sup>

Social media is known to help dental professionals by enhancing knowledge about how to maintain oral hygiene by educating them, and marketing to increase their patients, and follow-up of patients.<sup>5</sup> Social media is increasingly being used for marketing as a strategy for institutional recognition. Since the use of social media keeps on increasing every second, dentists make use of this platform as marketing using social media is known to be more effective than the conventional modalities.<sup>6</sup> Furthermore, since social media provides better graphical interaction with the patients, the representation of information shared by the dentists is more appreciable by the patients.

Despite various benefits offered by the use of social media by dentists, there are many setbacks associated with it. An array of misinformation is available on the social media regarding dentistry, such as posted by quacks, which at times can be proven to be harmful to the patients such as drug overdose and unnecessary dental procedures.<sup>7</sup> At times dentists share the pictures of the patients on social media regarding the before and after treatment changes without the patient's consent which can be a legal challenge for the dentists.<sup>8</sup> Since social media is a platform to connect with people, dentists may connect with their patients outside their clinics on social media which can be uncomfortable for some patients.<sup>9</sup> To counter such drawbacks of social media, some countries such as the United States of America and the United Kingdom have put forth certain guidelines for dental professionals regarding their use of social media.<sup>10</sup>

Some physicians consider that the use of social media has had a significant effect on improving their knowledge and skills, but they were uncomfortable with ethical issues related to it.<sup>11</sup> Moreover, it has been suggested that better guidelines for the use of social media must be implemented for safer and professional use of social media.<sup>12</sup> However, at the same time, the use of social media for professional purposes by dentists is vague at the present moment. There have been many concerns amongst dentists about the use of social media professionally. Due to limited studies exploring the professional use of social media by dentists, this study aims to assess the dentist's professional use of social media in their daily clinical practices.

## Methods and Materials

### Study Design and Sample Size

In this cross-sectional survey-based study, dental professionals who practiced dentistry in Pakistan were invited to take part. This study was carried out between December 2021 to March 2022. The collection of data was started after being granted ethical approval. This study was approved by the Ethical Review Committee of Altamash Institute of Dental Medicine and is in accordance with the Declaration of Helsinki. Using the convenience sample method, participants were recruited in this study who practiced dentistry in Pakistan. Verbal and written consent was taken from the participants to ensure voluntary participation. For a complete understanding of the purpose of this study, the objectives of this study were carefully and in simple language explained to the participants. The data was collected by using a well-structured online questionnaire that was formulated using Google Forms and distributed to the participants through various social media platforms such as Twitter®, Facebook®, Instagram®, Snapchat®, WhatsApp®, and Email®. A weekly reminder was sent to the participant as reminders for the participants who were identified as non-responders. To calculate the

sample size for this study, OpenEpi software was used. The confidence interval was kept at 95% and desired percentile at 5%, the sample size was calculated to be 372 ( $n = [Z_{1-\alpha/2} \cdot p \cdot q] / d^2$ ).<sup>2</sup>

## Design of Questionnaire

In this study, the questionnaire consisted of two parts that was adapted from a previous study.<sup>13</sup> The validity of the questionnaire was evaluated with face and content validity according to the objective of the study. The author's team evaluated the relevance and information of the items included in the questionnaire and selects specific items unanimously. The reliability of the questionnaire in local population was analyzed with Cronbach's alpha through SPSS software. The internal consistency of items was  $\alpha = 0.762$ . In the first part, sociodemographic characteristics of each participant such as age, gender, qualification, work experience, type of workplace, and work hours per day, were noted. The second part of the questionnaire assessed the perception of the dentists toward the use of social media for professional purposes. The following questions were asked ie, most frequently used social media platform, the method preferred for communicating with the patients, using a separate social media account for professional purposes, benefits of using social media, whether the use of social media leads to wastage of time during clinical hours, and ethical considerations of using social media by the dentists. All the questions in this questionnaire were kept in the English language along with their translation into the Urdu language.

## Inclusion and Exclusion Criteria

Participation in this study was based on assessing the use of social media by dentists for professional purposes. Dentists who have been practicing dentistry in Pakistan and were active on social media were included in this study. All other healthcare professionals besides dentists and dentists who did not use social media were excluded from this study. The information that was collected from the participants was kept confidential and anonymous throughout the duration of this study.

## Statistical Analysis

For data analysis, Statistical Package for the Social Sciences (SPSS) version 25.0 was used. Descriptive statistics were performed for the calculation of the mean, percentage, frequency, and standard deviation of the sociodemographic characteristics. A multiple Linear Regression test was used to assess the relationship of sociodemographic characteristics with the responses of the participants. A p-value of  $\leq 0.05$  was considered to be as statistically significant.

## Results

In this study, we received a total of 404 responses with a response rate of 89.7%. Out of 404 participants, there were 200 (49.5%) males and 204 (50.5%) females. Most of the 204 (50.5%) participants belonged to the age bracket of 18–30 years, followed by 92 (22.8%) participants in the 31–40 years of age bracket, and 52 (12.9%) participants in the 41–50 years of age bracket. Regarding the qualification of the participants, the majority of the 176 (43.6%) were general dentists, followed by 68 (16.8%) being specialists/consultants, and 52 (12.9%) for both Resident/Trainee and Academicians, with most of the participants (60.4%) practicing dentistry at a private workplace. Moreover, most of the 204 (50.5%) participants had a work experience of 0–5 years, followed by 88 (21.8%) with 6–10 years of work experience, and 56 (13.9%) with 11–15 years of work experience. Concerning the work hours, about 148 (36.6%) participants worked for 7–10 hours and 144 (35.6%) worked for 4–7 hours, as presented in [Table 1](#).

About the most frequently used social media platform, most of the participants chose Facebook (46.5%) and Instagram (39.6%) as their preferred choice of social media. Furthermore, for the number of hours spent on social media for general purposes, the majority of the 180 (44.6%) participants used social media for 2–4 hours, followed by 132 (32.7%) participants using it for 1–2 hours. To communicate with the patients, most of the 156 (38.6%) and 108 (26.7%) participants chose Phone Calls and In-person methods of communication to be the most preferred ones. The majority of the 276 (68.3%) dentists believed that the dentists should have a professional account to use social media for professional purposes, however, 48 (11.9%) dentists answered “No”.

Regarding the use of social media to improve knowledge and communication skills with the patients, the majority of the 280 (69.3%) dentists agreed with it, however, 52 (12.9%) disagreed. Using social media to sell and/or buy dental

**Table 1** Demographic Characteristics of the Participants (N= 404)

Demographics		Number/Percentage
<b>Age</b>	18–30 years	204 (50.5%)
	31–40 years	92 (22.8%)
	41–50 years	52 (12.9%)
	51–60 years	32 (7.9%)
	Above 60 years	24 (5.9%)
<b>Gender</b>	Male	200 (49.5%)
	Female	204 (50.5%)
<b>Occupation</b>	General Dentist	176 (43.6%)
	Resident/Trainee	52 (12.9%)
	Specialist/Consultant	68 (16.8%)
	Dental Intern	28 (6.9%)
	Researcher	28 (6.9%)
	Academician	52 (12.9%)
<b>Work experience</b>	0–5 years	204 (50.5%)
	6–10 years	88 (21.8%)
	11–15 years	56 (13.9%)
	16–20 years	24 (5.9%)
	Above 20 years	32 (7.9%)
<b>Type of Workplace</b>	Private	244 (60.4%)
	Government	72 (17.8%)
	Both	88 (21.8%)
<b>Work Hours Per Day</b>	1–3 hours	56 (13.9%)
	4–7 hours	144 (35.6%)
	7–10 hours	148 (36.6%)
	More than 10 hours	56 (13.9%)

equipment, most of the 252 (62.4%) participants answered “Yes”, whilst 152 (37.6%) answered “No”. To conduct virtual meetings and lectures using social media with faculty and students, the majority of the 308 (76.2%) dental professionals did use social media for such purposes, with a few dentists (23.8%) did not. The majority of the 316 (78.2%) dental professionals believed that social media can be used by the dentists to share ideas and innovations with their dental communities, however, a few (8.9%) dental professionals disagreed. To use social media to overcome shyness rather than face-to-face dental activities, just over half of the dentists (52.5%) agreed to it, with just over a quarter (26.7%) disagreeing.

About the concern of wastage of time causes by using social media for reasons other than professional during regular clinical hours, most of the 248 (61.4%) dentists answered “Yes” as to lead to wastage of time, with a few 68 (16.8%) dentists disagreeing to it. The majority of the 300 (74.3%) dentists believed that social media provides dentists to share the common problems faced and their solutions with fellow dentists, but 48 (11.9%) disagreed. Regarding misinformation circulating on the social media about dentistry, about 240 (59.4%) dentists stated that it is their duty to disapprove of such content, with 100 (24.8%) being unsure about it. Since online consultations have been on the rise in recent times, the majority of the 280 (69.3%) dentists were comfortable with online consultations, but 76 (18.8%) dentists were not comfortable.

About the ethics to use social media to look for patient’s information on social media, most of the 228 (56.4%) dentists believed it to be unethical, however, 92 (22.8%) felt nothing wrong with it. To use social media for the online courses instead of practical learning of dentistry, just over half of the dentists (53.5%) believed online courses cannot replace practical learning, but 148 (36.6%) preferred online courses. In concern of posting pictures of clinical cases on

**Table 2** Comparison of Demographic Characteristics with Responses of Participants Using Multiple Linear Regression (N= 404)

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std. Error	Beta		
Age	-0.066	0.030	-0.256	-2.197	0.029
Gender	-0.084	0.033	-0.135	-2.549	0.011
Qualification	0.037	0.009	0.215	4.381	0.001
Work Experience	-0.002	0.031	-0.006	-0.050	0.961
Type of workplace	0.039	0.021	0.102	1.848	0.065
Work hours per day	-0.005	0.020	-0.015	-0.258	0.796

**Abbreviations:** B, the rate of change per unit between dependent and independent variables (Beta denotes the correlation between variables); Std. Error, Standard error.

**Table 3** Comparison of Gender with Responses of the Participants (n=404)

Gender	N	Mean	Standard Deviation	Standard Error Mean	Mean Difference	t- value	df	p-value
Male	200	1.67	0.27	0.019	0.028	0.919	402	0.358
Female	204	1.65	0.34	0.023				

**Abbreviations:** N, frequency, df, difference.

social media to attract patients to your clinics, most of the 340 (84.2%) dentists agreed to it, however, a small number of 28 (6.9%) disagreed. Regarding the appropriateness of connecting with patients on social media, 160 (39.6%) dentists agreed and 156 (38.6) disagreed. About using any professional guidelines to use social media, 232 (57.4%) dentists did not follow any such guidelines, with 172 (42.6%) did follow some guidelines. The regression analysis found the value of R-square to be 0.095 and adjusted R-square 0.081. Regarding the comparison of age, gender, qualification, work experience, type of workplace, and work hours per day with the response of the participants, a significant relationship was noted with age (p-value=0.029), gender (p-value=0.011), and qualification (p-value=0.001), as presented in Table 2.

About the comparison of the gender with the responses of the participants, no significant difference was noted (p-value=0.358), as presented in Table 3.

## Discussion

Social media has currently become one of the most significant and essential parts of people's lives including dentistry. Social media nowadays is used for different purposes such as advertisements, marketing, and education. Dentists use social media to attract patients to their clinics by posting pictures of their clinical cases and connecting with their patients on social media.

In this study, we found that most of the dentists do use social media for general purposes for more than 2 hours on average. Furthermore, it was found that younger individuals tend to use social media more for general purposes as compared to older adults. Such findings correspond with a study by Uma et al where it was concluded that dental undergraduates use social media for more than eleven hours per week.<sup>14</sup> For communication with the patients, participants of this study chose phone calls and in-person methods to be more comfortable. Such results correspond with a study by Bibona et al where a phone call was the most preferred modality.<sup>15</sup>

Social media provides a platform to improve the knowledge and communication skills of dentists, as stated by the majority of participants in our study. These findings correspond with a study in the literature that states the benefits of

social media such as improving communication and sharing ideas and knowledge.<sup>16</sup> In our study, dentists did prefer using social media to buy and/or sell dental equipment. These findings have also been concluded in a study by Gadish et al where dental offices have been reported to switch to online purchasing of dental supplies and equipment.<sup>17</sup> Trading of dental equipment through social media has proven to be time-saving for dentists who are already preoccupied with their busy schedules as online purchasing can be done remotely.

Due to the COVID-19 pandemic, many individuals and institutes have switched to the virtual world to carry out their meetings and lectures. Likewise, participants of our study agreed to use social media to conduct online lectures and meetings. These conclusions have also been reported in multiple studies in the literature as there has been a rise in online education, especially during the COVID-19 pandemic situation.<sup>18,19</sup> Furthermore, the coronavirus pandemic has led to the use of teledentistry where online consultations are performed to decrease the rate of infectivity of the virus.<sup>4</sup>

In our study, participants believed that those dentists who are shy of face-to-face dental activities can use social media to learn. Such findings have been observed in literature where social media helps dentists to overcome their shyness.<sup>20</sup> However, online learning might not always be beneficial for dentists as clinical skills cannot be practiced in an online setup, and instructors are not able to comprehend the level of understanding of the participants.<sup>21</sup>

The use of social media takes a lot of time for dentists as many different entertainment and infotainment are available on social media that can engage the dentists for unnecessarily long periods of time. Similarly, the participants of our study believed that the use of social media during the regular clinical hours led to unnecessary wastage of regular clinical hours. These results correspond with a study by Sharka et al, where it was found that the use of social media led to wastage of time and ignorance of performing important tasks at hand.<sup>22</sup> Many dentists in our study believed that as a dentist, it is their responsibility to disapprove and correct such content. To tackle such misinformation, publishing real and authentic news has one of the suggested ways.<sup>23</sup>

Online consultations have currently seen a huge spike in recent times primarily due to the COVID-19 pandemic in order to curb the rate of infectivity of the virus. In our study, most of the dentists reported being comfortable performing online consultations with the patients. Such findings correspond with various studies in the literature where the dentists strongly suggested the use of online consultations ie, Teledentistry, especially in the presence of the COVID-19 pandemic.<sup>24,25</sup> Furthermore, patients were also reported to be comfortable and satisfied with the online consultations with their doctors.<sup>26</sup>

In our study, dentists believed that looking for information about their patients on social media is an unethical practice for them. There are guidelines that are present that prevent the discussion and keep the personal information of the patients anonymous to protect the privacy of the patients.<sup>27</sup> Many dentists do post pictures of their clinical cases online on social media as a way of attracting more patients to their clinics, as found in our study. Such observations have been found in the literature where patients use social media to look for clinical cases posted by the dentists as a way to choose a suitable dentist for them.<sup>28</sup>

Regarding the appropriateness of dentists connecting with their patients on social media, in our study, most of the dentists considered it inappropriate. Likewise, in a study by Parmar et al, it was found that the patients considered it inappropriate to connect with their dentists on social media.<sup>9</sup> Furthermore, British Medical Association (BMA) also suggests that it might not be appropriate to connect with the patients on social media.<sup>29</sup> Moreover, in our study, over half of the dentists did not follow any guidelines to use social media for professional purposes. However, guidelines to ensure the appropriate and ethical use of social media by dentists are available.<sup>30</sup> Moreover, technological advancements such as the use of teledentistry that facilitates remote consultations and artificial intelligence have further improved oral health care for patients.<sup>30</sup>

In our study, light has been shed on the professional use of social media by the dentists as day by day more patients and dentists are making use of it. The dental practice is being enhanced by the use of social media to attract more patients to the clinics. Despite the strengths of this study such as a good sample size of the patients and the inclusion of different levels of qualifications of dentists, we were met with some limitations. Firstly, since the forms were distributed to the participants electronically, they either do not respond to it or might not be available on such platforms. Lastly, this study only had social media users, it will be more interesting to compare the social media users with non-users.

## Conclusion

The use of social media is evolving amongst the healthcare professionals, including the dentists. Most of the dentists acknowledged the importance and professional use of social media. Social media is an essential tool for the dentists for growth of their clinical practice. However, efficient and moral use of social media should be considered by the dentists so that the integrity, professionalism, and privacy of the patients is not compromised.

## Data Sharing Statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Ethics Approval and Consent to Participate

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethical Review Committee of Altamash Institute of Dental Medicine. The consent obtained from each participant prior to the commencement of the study was informed consent. The survey was anonymous and voluntary.

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## Disclosure

The authors declare no conflict of interest.

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