

# Connectivity and Integration of Instagram® Use in the Lives of Dental Students and Professionals: A Country-Wide Cross-Sectional Study Using the InstaAA© Questionnaire

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**Purpose:** This study probed towards the impact of Instagram® on the lives of dental students and professionals and how it affects their learning and professional performance.

**Patients and Methods:** A 24-item copyrighted and validated questionnaire was employed to examine the affinity and aftermath of Instagram® in the lives of dental students using a cross-sectional survey technique. Part I (6 questions) is the first of three sections included information on the participant's sociodemographic traits, Part II (8 questions) - Screened to determine Instagram® use, and Part III (10 questions) - Was based on attitudes regarding Instagram® to assess their mental, physical, and emotional well-being. It includes a Likert scale with ten questions. The sample was collected by combining convenience and snowball sampling approaches. The difference in proportion was assessed using frequency and percentage. The Chi Square test of proportion was used to the data to examine and a p value <0.05 was considered as the proportional difference.

**Results:** The study comprised 461 participants, with 155 (33.6%) men and 306 (66.4%) women, having an average age of 23.13 ± 4.95 years. Among the participants, a significant proportion (119, 25.8%) were dental interns. In terms of Instagram® usage, 167 participants (36.2%) reported spending between 30 minutes and 1 hour on the platform (p<0.01). Approximately 52.5% acknowledged the influence of Instagram® on their dressing, behaviour, and usage of other social media platforms (p<0.01). Moreover, 52.1% experienced common distractions while performing important tasks, and 40.6% reported negative effects on their mental and emotional well-being (p<0.05).

**Conclusion:** This research concludes by emphasizing the huge influence that Instagram® has on dental workers' life. The results underline the necessity of striking a balance between social media use and academic and personal obligations while also emphasizing the need for knowledge and education about Instagram® features and ramifications.

**Keywords:** Instagram®, dental professionals, dental students, social media, mental impact

## Introduction

Social media has become a revolutionary force in an era where smartphones and the internet are prevalent having a significant influence on people, businesses, and society across the globe. Unprecedented levels of connectivity and interaction have emerged as a result of the increasing adoption of mobile internet access. Social media platforms have become an essential part of our daily routines, allowing us to communicate with friends and family, share information

and experiences, and stay informed about current events. This ubiquitous influence highlights the need for a more thorough investigation of its effects, especially among mindful target populations.<sup>1</sup>

While social media has unquestionable benefits, others worry that it might also have negative consequences on behavior and mental health.<sup>2</sup> Social comparison, or comparing one's own life and accomplishments to those of others on social media, has been noted as a factor that can have a detrimental effect on mental health.<sup>3</sup> Anxiety, depression, feelings of inadequacy, and low self-esteem can follow. Social media addiction has also been linked to lower productivity and social involvement, which can occasionally disturb sleep habits.<sup>4</sup>

Facebook® and Instagram® stand out as two of the most popular social networking sites on a global basis. These platforms include a variety of communication channels, including text postings, videos, and photos. Real-time chat feature enables user-to-user conversation. Particularly Instagram®, which enables users to build profiles, upload photographs and videos as well as communicate in real time via comments and direct messages, lays a high focus on sharing and attractive visual material. A key participant in the social media scene, Instagram® anticipates having 1.47 billion monthly active users in 2022 thanks to features like stories and live videos that have further improved the user experience.<sup>5,6</sup>

An enormous shift towards digital technology, particularly digital social media (DSM), was brought forth by the COVID-19 pandemic.<sup>7</sup> Instagram® usage increased as a result of the crisis, reaching 1.2 billion global monthly active users in 2019.<sup>8</sup> People all around the world are becoming more and more dependent on digital means for communication, employment, and socialization due to lockdowns and social isolation policies. The astounding figure of 3.8 billion DSM users globally highlights the significant influence of social media on both personal and professional facets of people's life.<sup>9</sup>

Students and professionals in the dental sector now use DSM as well. Up to 98% of dental students and 75% of dental professionals claimed to use social media for both personal and professional purposes, according to a study that was published in the *Journal of Dental Education*.<sup>10</sup> Social media is used by dental students, professionals, and industry experts to network with peers et al, remain current on industry news, and exchange knowledge. In addition to providing chances for marketing and promoting dentistry practices, social media platforms also provide alternatives for continuing education and professional development.

By conducting an important study, Ellison et al created the Facebook Intensity Scale to explore the social consequences of Facebook use and made a substantial contribution to our knowledge of how social media might affect social capital and social connectivity.<sup>11</sup> To the best of the authors' knowledge, no particular study has looked at how dental professionals use Instagram and how it is connected to their daily life. Thus, the purpose of this study is to examine the impact that Instagram® has had on the lives of dental professionals as well as to determine how it has affected their ability to learn and function effectively.

## Materials and Methods

### Ethical Considerations

Ethical approval for this study was obtained from the Institutional Ethics Committee of Nair Hospital Dental College, Mumbai (EC-192/CONS/ND-110/2023). Participants were assured of confidentiality and anonymity, as no personally identifiable information was collected during the survey. Participation was voluntary, and participants had the option to withdraw from the study at any time without consequences. All participants were made aware of the study's goals and the safeguards for confidentiality and privacy prior to the commencement of the questionnaire response. All information was gathered anonymously. They were told they may withdraw from the research at any moment. Each participant voluntarily provided their informed consent to be included.

### Study Approach

To examine how connected and integrated Instagram® use is in the lives of dental professionals and dentistry students, this study used a cross-sectional survey approach. This study aimed to analyze affinity and aftermath of Instagram® in the lives of dental students by a 24-item questionnaire. Previous studies have emphasized the importance of social media

platforms in a range of professional fields and their influence on people's lives. The significance of our study in the context of dental professionals was highlighted by Lim et al,<sup>12</sup> who looked at how Instagram® shapes professional identity and relationship among healthcare practitioners. Additionally, another study explored the psychological and emotional components of social media use and provided insights into how Instagram® may affect users' mental and emotional health, which is a key component of our study.<sup>5</sup> In order to ensure that our study is well-grounded in the body of literature and addresses significant issues of Instagram® usage among dental professionals and students, these major references contributed to the design of our research and the development of our questionnaire.

The questionnaire was divided into 3 parts:

Part I (6 questions) – Included information on the participant's sociodemographic characteristics, which included gender, age, marital status, current academic position and type of accommodation. The current academic position was divided into UG student, PG student, Dental faculty in a dental school and Private practitioner. Type of accommodation was added to know the aftermath of living in hostel or living alone or with family on the usage of Instagram® (Figure 1).

Part II (8 questions) – Screened to know the usage of Instagram®. Questions were added to check frequency of Instagram® usage, reasons for usage, its effect on mental health and to check decreased working efficiency due to distraction caused by Instagram® notifications (Figure 2).

### Patil And Pawar's Questionnaire for Instagram Affinity and Aftermath (InstaAA)©.

By filling the form participants are giving permission to use data for the study(participants assured of confidentiality)

#### Part I: Demographic Characteristics

1. Gender:
 

☐ Male
 ☐ Female
2. Age in years:
3. Place from:
 

☐ State
 ☐ City
4. Current Academic position
 

☐ 1<sup>st</sup> BDS
 ☐ 2<sup>nd</sup> BDS
 ☐ 3<sup>rd</sup> BDS
 ☐ 4<sup>th</sup> BDS
 ☐ Intern
 ☐ Post-graduate
 ☐ Faculty in a dental school
 ☐ Private Practice
5. Marital Status:
 

☐ Married
 ☐ Single
6. Type of Accommodation?
 

☐ With family
 ☐ At College provided Hostel
 ☐ Paying Guest
 ☐ Rented apartment individually
 ☐ Rented apartment with roommate

**Figure 1** Patil and Pawar's questionnaire for Instagram Affinity and Aftermath (InstaAA)© recording the Demographic Characteristics.

## Part II: Usage of Instagram®

1. Do you have Instagram ® account?
  - ☐ Yes
  - ☐ No
2. How many Instagram ® followers do you have?
  - ☐ <100
  - ☐ 100-500
  - ☐ >500
3. Why do you have Instagram ® account?
  - ☐ For relaxation
  - ☐ For work
  - ☐ For communication
  - ☐ Because everyone has
4. Average time you spend on Instagram ® ?  
(In Instagram ® on your mobile “Go to your profile”, Click on the “three horizontal lines” on “top right”, go to “Your activity” and open “Time Spent”)
5. Are you aware that you can set a daily time limit in your Instagram ® application?
6. How often you get distracted to check Instagram ® while you are working?
7. How do you feel about the posts that others post on their Instagram ® account?
8. How often do you post stories on your Instagram ® account?

**Figure 2** Patil and Pawar's questionnaire for Instagram Affinity and Aftermath (InstaAA)© recording the Usage of Instagram®.

Part III (10 questions) – Was based on attitude towards Instagram® to check mental, physical and emotional well-being of dental professionals. It included Likert scale which consists of 10 questions. Each question was given a score: 1=strongly disagree, 2=disagree, 3=agree, or 4=strongly agree. Questions were added to know influence of Instagram® on social relations, how “like”/ “followers” / “views” affecting mental and emotional well-being of users. It also helped to know, if users get distracted while working due to Instagram®, benefit of time limit setting application present on Instagram®, and if the usage increased during or after Covid-19. The effect of Instagram® on the academic performance

and working efficiency of dental students and professionals were the basis of the formulated questionnaire. It also aimed to assess Instagram® impact on mental, physical and emotional well-being of users (Figure 3).

The questionnaire employed in this study is known as the Patil and Pawar's Questionnaire for Instagram Affinity and Aftermath (InstaAA)©. The questionnaire is copyrighted and registered with the Copyright Office of India (ROC No.: L-124028/2023 registered on 07 Jun 2023). The utilization of this validated questionnaire ensures the reliability and integrity of the data collected in assessing Instagram® affinity and its subsequent effects.

## Reliability and Validation of the Questionnaire

This study thoroughly evaluated the reliability of the questionnaire. In a restricted subgroup of participants (n=46), the questionnaire was completed twice, two weeks apart. A Pearson correlation coefficient of 0.85, indicating the questionnaire's ability to provide consistent findings across time, provided strong evidence of consistency in the test-retest reliability analysis results. Cronbach's alpha, another method used to assess internal reliability, produced a value of 0.92, confirming the instrument's high level of internal consistency amongst its components.

We ran a pilot study involving a small sample size of 46 participants before we started conducting field research. These participants, which included dental professionals and dental students, were only chosen to provide an accurate representation of our intended audience. The survey instrument's clarity, comprehensibility, and relevance were three key areas where the pilot research was vital in detecting any potential flaws. It was urged for those who took part in the pilot

### Part III: Attitude towards Instagram®

1. Do you feel Instagram® plays an important role in your social relationships?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
2. Do you get frustrated when login fails?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
3. Does “likes” / “followers” / “views” on Instagram® have any effect on you?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
4. Do you find yourself influenced by Instagram® posts?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
5. Does Instagram® influence the way you dress, style, or behave?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
6. Do you think you get distracted frequently by Instagram® while studying or doing something important?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
7. Do you feel Instagram® has negatively affected your mental and emotional well-being?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
8. Do you think Instagram® is one of the reasons for decreased physical activity?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
9. Do you think setting a daily time limit to Instagram® would be beneficial?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree
10. Do you think your Instagram® usage increased during and after Covid-19?  
1-Strongly Disagree   2-Disagree   3-Agree   4-Strongly Agree

**Figure 3** Patil and Pawar's questionnaire for Instagram Affinity and Aftermath (InstaAA)© recording the Attitude towards Instagram®.

research to offer comments on the survey's language, format, and subject matter. Their insightful feedback helped us to improve the questionnaire, making sure that it reliably measures the variables of interest and captures the desired constructions.

Through a thorough analysis of pertinent literature and interactions with subject matter specialists in the field of dentistry, content validity was painstakingly addressed. These in-depth discussions provided reassurance that the questionnaire correctly reflected the essential elements and concepts of our investigation. Additionally, exploratory factor analysis (EFA) was used to assess the concept validity using information from a preliminary pilot research ( $n=46$ ). With factor loadings over 0.70, the EFA findings confirmed the existence of unique and theoretically significant factors, demonstrating the questionnaire's capability to measure the desired constructs.

## Sample Size Estimation

A nation-wide sample of dental students and dental professionals was targeted for this study. The sample was obtained using a combination of convenience and snowball sampling techniques. An initial set of participants was recruited through professional dental associations, educational institutions, and social media platforms. These participants were then encouraged to share the survey link with their colleagues and peers, facilitating the snowball sampling process.

In order to determine the appropriate sample size for this study, a formula was utilized. The formula employed was the following:

$$\text{Sample size}(n)=[\text{DEFF} * N * p*(1 - p)]/[(d^2/Z^2*(1 - \alpha/2)*(N - 1)+p*(1 - p)]$$

Using the given parameters of the study, which included a population size ( $N$ ) of 1,000,000, a hypothesized frequency of the outcome factor in the population ( $p$ ) of  $47.9\% \pm 5\%$ , and confidence limits as a percentage of 100 ( $d$ ) set at 5%, the formula was applied. The design effect (DEFF) was determined to be 1, as it was not applicable to this particular study. At a confidence level of 95%, the calculated sample size was determined to be 384.

To account for potential non-response, a 20% non-response rate was considered. Consequently, the total sample size was adjusted by adding the estimated number of non-respondents to the initial sample size. Consequently, the final sample size obtained through the convenience sampling technique was  $384 + 77$ , resulting in a final sample size of 461.

## Study Population

### Inclusion Criteria

Participants needed to fit the following requirements in order to be enrolled into the study: (1) be a dental professional or a dental student enrolled in an accredited dental program, (2) be at least 18 years old, and (3) have access to the internet and Instagram.<sup>®</sup>

### Exclusion Criteria

The following criteria were used to filter out individuals from the study: (1) Participants under the age of 18, (2) Participants who were not dental professionals or dental students, and (3) Individuals without internet or Instagram<sup>®</sup> account.

### Survey Instrument

The survey instrument was developed by the research team based on a comprehensive review of the literature on social media use, connectedness, and professional identity among dental professionals and students. All data was collected using Google form (<https://forms.gle/5oGV3ZaPygZFA9Pd8>). The survey was made available to potential participants (dental students and professionals) through personal message on WhatsApp,<sup>®</sup> Instagram,<sup>®</sup> Facebook,<sup>®</sup> and email. Participants identity and email id were not collected. The survey was administered over a period of six weeks. Reminder emails and social media posts were utilized to enhance participant recruitment and retention.

## Statistical Analysis

The information was gathered and entered into Microsoft Excel version 13. The data was statistically analyzed using IBM SPSS version 21. Frequency and percentage were used to assess the difference in proportion for Demographic

**Table 1** Distribution of the Study Participants According to the Gender

		Frequency (Percentage)	P value
Gender	Male	155 (33.6)	<0.01
	Female	306 (66.4)	
	Total	461 (100)	

Details, Instagram® Usage, and Attitude Towards Instagram®. To analyze the difference in proportion, the Chi Square test of proportion was used to the data. The confidence interval for all statistical analyses was set at 95%, and ( $p < 0.05$ ) was considered statistically significant.

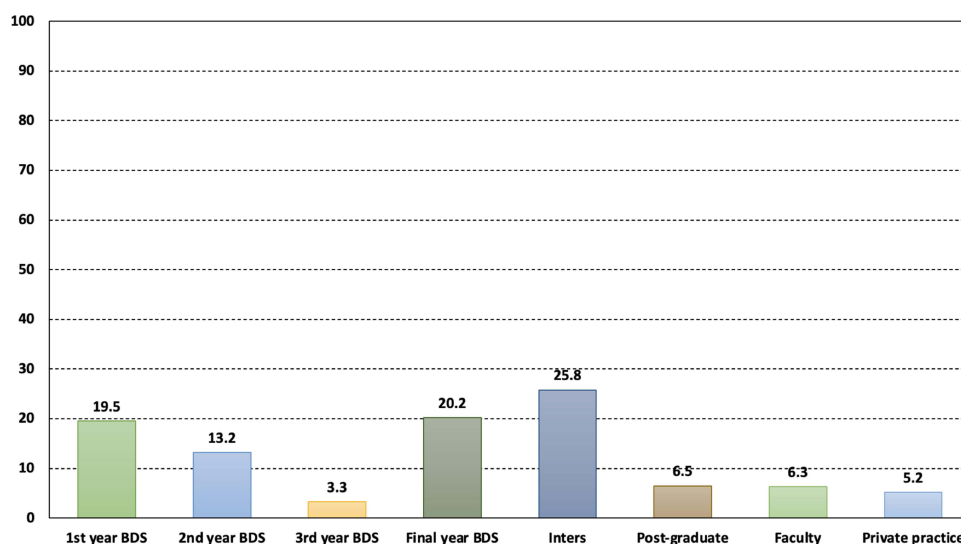
## Results

### Demographics

The study sample consisted of 461 individuals, with 155 (33.6%) being male and 306 (66.4%) being female, demonstrating a statistically significant difference in the percentage distribution (Table 1). The participants had an average age of  $23.13 \pm 4.95$ . Among the participants, the majority (119, 25.8%) were Dental Interns (Figure 4). Regarding marital status, 351 participants (76.1%) were single, while 110 participants (23.9%) were married, with a statistically significant difference observed ( $p < 0.01$ ) as presented in (Table 2). Furthermore, the majority of participants (235, 51.0%) were residing in college-provided hostels (Table 3).

### Usage of Instagram®

The analysis of Instagram® usage revealed that out of the total respondents ( $n = 538$ ), 461 participants had an Instagram® account, while 77 participants did not. Therefore, the subsequent evaluation focused on the 461 participants with an Instagram® account. Among these participants, the majority (302, 65.5%) reported having between 100 and 500 Instagram® followers. Regarding the reasons for using Instagram®, a significant proportion (285, 61.8%) mentioned relaxation, work, communication, or simply because everyone else uses it, while 176 participants (38.52%) indicated multiple reasons ( $p < 0.01$ ). In terms of time spent on Instagram®, 167 participants (36.2%) reported using it for 30

**Figure 4** Distribution of percentages of the study participants according to the academic position.



**Table 2** Distribution of the Study Participants According to Their Marital Status

		Frequency (Percentage)	P value
Marital Status	Single	351 (76.1)	<0.01
	Married	110 (23.9)	
	Total	461 (100)	

**Table 3** Distribution of the Study Participants According to Their Type of Accommodation

		Frequency (Percentage)	P value
Accommodation	With family	186 (40.3)	<0.01
	College provided hostel	235 (51.0)	
	Paying guest	26 (5.6)	
	Rented apartment (individual)	6 (1.3)	
	Rented apartment (Roommate)	8 (1.7)	
	Total	461 (100)	

minutes to 1 hour ( $p<0.01$ ), and a majority of participants (197, 42.7%) reported not getting distracted by checking Instagram® ( $p<0.01$ ). Additionally, a significant proportion of participants (200, 43.4%) reported posting Instagram® stories once a month ( $p<0.01$ ) (Table 4).

## Attitude

The data from the survey questions indicate the following patterns among the participants. Regarding the role of Instagram® in social relationships, a significant majority (61.8%) agreed that it plays an important role. When it

**Table 4** Distribution of the Study Participants According to the Trends in Using Instagram®

Sr. No.	Questions	Responses	Frequency	Percent	P value
1	Do you have Instagram® account?	Yes	461	83.3	<0.01
		No	77	16.7	
2	How many Instagram® followers do you have?	<100	38	8.2	<0.01
		100–500	302	65.5	
		>500	121	26.2	
		Total	461	100.0	
3	Why do you have Instagram® account?	Single reason (Relaxation, work, Communication or because everyone has)	285	61.8	<0.01
		Multiple reasons	176	38.2	
		Total	461	100.0	

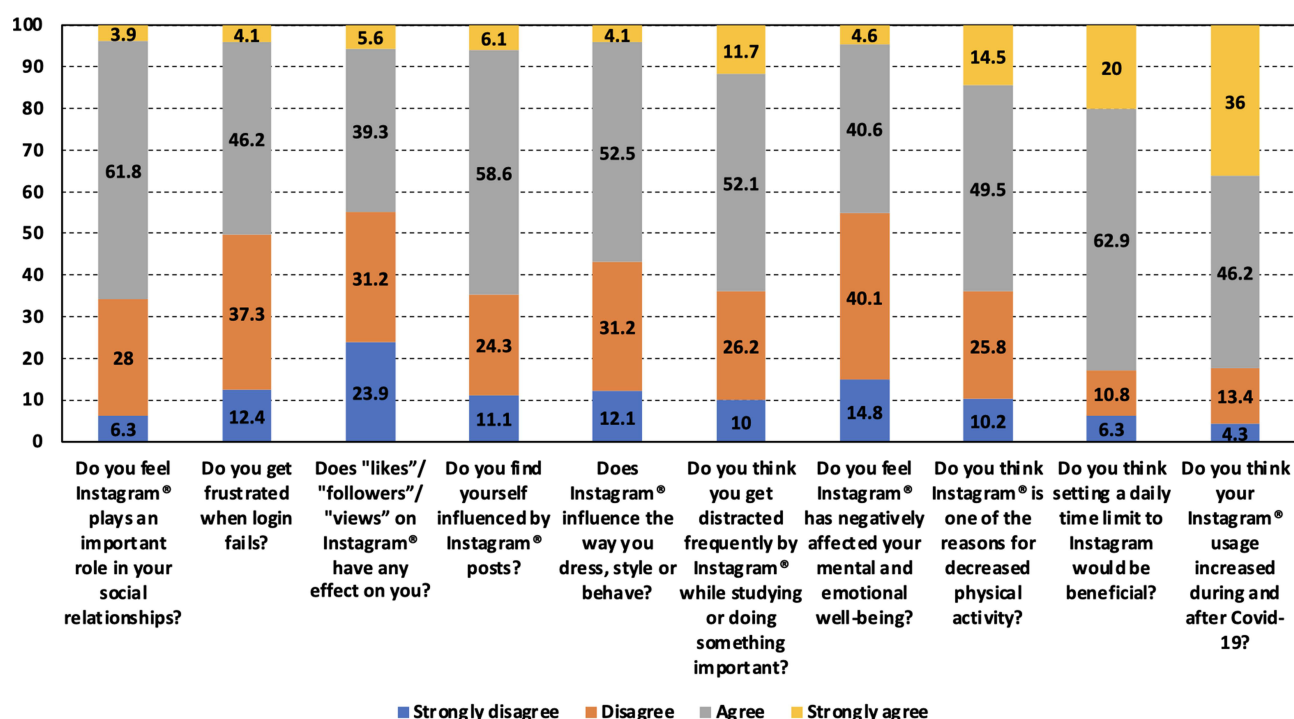
(Continued)



Table 4 (Continued).

Sr. No.	Questions	Responses	Frequency	Percent	P value
4	<b>Average time you spend on Instagram®</b>	<30 mins	126	27.3	<0.01
		30min to 1 hour	167	36.2	
		1 hour to 2 hours	137	29.7	
		>2 hours	31	6.7	
		Total	461	100.0	
5	<b>Are you aware that you can set a daily time limit in your Instagram® application?</b>	Yes	375	81.3	<0.01
		No	86	18.7	
		Total	461	100.0	
6	<b>How often you get distracted to check Instagram® while you are working?</b>	Every 10 min	55	11.9	<0.01
		In half an hour	64	13.9	
		In an hour	145	31.5	
		Do not get distracted	197	42.7	
		Total	461	100.0	
7	<b>How do you feel about the posts that others post on their Instagram® account?</b>	Insecure	37	8.0	<0.01
		Feel happy	81	17.6	
		Offensive	07	1.5	
		Unbothered	336	72.9	
		Total	461	100.0	
8	<b>How often do you post stories on your Instagram® account?</b>	Everyday	6	1.3	<0.01
		Once in 3 Days	56	12.1	
		Once in a week	43	9.3	
		Once in 15 days	82	17.8	
		Once a month	200	43.4	
		Never	74	16.1	
		Total	461	100.0	

comes to frustrations with login failures, 46.2% agreed, showing a considerable proportion. The impact of “likes”, “followers”, and “views” on Instagram® was acknowledged by 39.3% of the participants. Additionally, a substantial majority (58.6%) reported being influenced by Instagram® posts. Instagram® was seen to influence participants’ dressing, style, or behaviour, with 52.5% agreeing to this statement. Distraction during important tasks was also prevalent, as 52.1% of the participants agreed. Negative effects on mental and emotional well-being were reported by 40.6% of the respondents. Instagram® was considered a contributing factor to decreased physical activity by 49.5% of the participants. Setting a daily time limit on Instagram® was seen as beneficial by a significant majority (62.9%). Finally, the majority (46.2%) reported an increase in Instagram® usage during and after the Covid-19 pandemic (Figure 5).



**Figure 5** Distribution of percentages of the study participants according to their attitude towards the usage of Instagram®.

## Discussion

The results of the current study shed insights into the influence and reach of Instagram® in the lives of dental students. It was found that women tended to use Instagram® more regularly than males, which might be explained by a number of things such as different interests, social expectations, and cultural norms. Additionally, young dental students could be more motivated to use social media sites like Instagram® to network professionally, demonstrate their knowledge, and promote their services. Therefore, these are probably more frequent Instagram® users than older ones. The findings highlight the prevalence and relevance of Instagram® in the lives of Dental students, particularly among women and those in the early stages of their professional journey. These findings are in accordance with studies reported by Al-Khalifa et al,<sup>13</sup> Meira et al,<sup>14</sup> and Cumerlato et al.<sup>15</sup>

Mondkar et al, reported that a sizable percentage of people (87%) use the internet either regularly or nearly daily. Additionally, 79% of people use mobile devices to access the internet, making it simple to connect to social networking sites.<sup>16,17</sup> These data show how commonplace internet use has become, as well as how much more people are relying on mobile devices for online activity. Another study by Dobson et al, found that a substantial number of participants use social media sites for both personal and professional reasons.<sup>18</sup> Particularly, 75% of dental professionals and up to 98% of dental students said they often use digital social media (DSM).<sup>19</sup> By demonstrating its frequency and usefulness for both educational and professional contacts, these results highlight the importance of social media in the dental industry. These findings emphasize the widespread acceptance of the internet and the importance of social networking sites like DSM in people's lives, especially those of dental students and professionals.

According to this analysis, 57.9% of participants live alone, either in hostels or leased flats, compared to 42% who live with family or roommates. A total of 65.5% of people who live alone on Instagram® have between 100 and 500 followers. According to the research, those who live alone may be more likely to use Instagram® to interact with friends and family and perhaps lessen feelings of loneliness. People who live with relatives, on the other hand, might not use Instagram® as regularly since they have more opportunity for in-person connections and might only use it occasionally for entertaining or professional purposes. These findings emphasize the possible impact of living circumstances on dental

students' Instagram<sup>®</sup> usage behaviors, with those who live alone maybe making use of it more frequently for social interaction and companionship.

Dental students use social media for a variety of objectives, including communication, professional education (teaching and learning dentistry), and dental practice publicity (promoting oral health care and selling dental services), according to research by Gonzalez et al.<sup>20</sup> This demonstrates the wide variety of applications and advantages social media platforms may provide to dental practitioners in their practice. These results are in contrast to the current study's findings, which show that a sizeable portion (61.8%) of participants use Instagram<sup>®</sup> mostly for leisure or excitement. This entails looking through fascinating images and videos, which offers a way to engage in leisure-related activities. Furthermore, 32% of the participants stated that they used Instagram<sup>®</sup> for communication since the app enables them to interact with friends, family, and people all over the world through chat, photo, and video sharing capabilities. Additionally, according to 15% of the dental participants surveyed, having an Instagram<sup>®</sup> account is a way for them to fit in with their peers and allay fear of missing out "FOMO". This implies that their Instagram<sup>®</sup> usage habits are influenced by their desire to fit in and their concern about being left out in society.<sup>21</sup>

These contrasting findings between the study by Gonzales et al,<sup>20</sup> and the present study highlight the multifaceted nature of social media use among dental professionals. While some dentists focus on professional aspects such as education and promotion, a significant proportion of participants prioritize relaxation, entertainment, communication, social acceptance, and addressing the fear of missing out through their Instagram<sup>®</sup> usage. This suggests that social media platforms like Instagram<sup>®</sup> serve various personal and social needs for dental students and professionals, in addition to their professional utilization.

According to the study's findings, the participants use Instagram<sup>®</sup> for 1 to 2 hours a week on average. It is crucial to remember that excessive usage of social media, especially Instagram<sup>®</sup>, may have unfavorable effects. Similar findings were made by Sharka et al,<sup>19</sup> who found that around half of the respondents acknowledged to using digital social media (DSM) for up to two hours per day, negatively affecting both everyday work and academic advancement for students and professionals. According to Younes et al,<sup>22</sup> excessive internet use and addiction have been connected to a number of mental health conditions, such as depression, anxiety, stress, sleeplessness, and low self-esteem in students. Furthermore, research done by Bhattarai et al, showed that excessive internet use has an effect on dentistry students' mental health either directly or indirectly.<sup>23</sup>

These results provide credence to the idea that excessive use of social media, including Instagram<sup>®</sup>, can lead to addiction, stress, anxiety, poor academic performance, poor sleep quality, eye strain, migraines, and mental health problems. Social media's continual accessibility and immersive nature might cause users to miss other crucial tasks, which has detrimental effects on their mental and physical health.<sup>24</sup> Dental professionals and students must develop ways for keeping a good balance between online participation and other elements of their life in addition to being aware of the possible hazards linked to excessive social media use.

The findings of the current study disclosed that a substantial percentage of participants (18.7%) were not aware of the time restriction setting option of Instagram<sup>®</sup>. Users may set a time limit for how long they spend on Instagram<sup>®</sup> thanks to this function. It is crucial to emphasize the potential advantages of making use of this function, especially for dentistry students who frequently struggle to strike a balance between their social media usage and their academic obligations.<sup>25</sup>

Setting a time restriction on Instagram<sup>®</sup> can improve individuals' wellbeing in a number of ways.<sup>26</sup> Before anything else, it aids in striking a balance between academic obligations and social media use. Individuals who spend less time on Instagram<sup>®</sup> tend to perform better academically and experience less stress because they devote more time and attention to their schoolwork. Additionally, excessive social media usage has been linked to depressive and anxious mental health consequences.<sup>27</sup> Individuals can reduce these hazards and preserve better mental health by setting a time restriction. The time restriction function also promotes self-control and time management abilities. It motivates people to prioritize their activities well by raising awareness of how much time is spent on social media. Students studying dentistry in particular might increase their productivity and efficiency in other parts of their lives by actively managing their Instagram<sup>®</sup> use.

Several research have emphasized the negative effects of social media, particularly Instagram<sup>®</sup>, on concentration and productivity. Social media distractions at work can reduce productivity and cause time to be lost on unrelated tasks (25%).<sup>28</sup> In line with this, the results of the current survey showed that 52.1% of participants admitted to becoming side-

tracked by Instagram<sup>®</sup> while doing homework or other crucial duties. By interfering with the functional connectivity and synchronization of pertinent brain areas, Liu et al,<sup>29</sup> further showed that excessive social media usage and dependence on internet searches impair memory retrieval.

According to the survey, a sizeable percentage of participants displayed a lack of interest towards other people's shared content, and a substantial 72.9% of them admitted to feeling insecure as they attempted to live up to their favorite fictional characters in real life. When exposed to other users' posts, especially those about trips or accomplishments, many users frequently feel dissatisfied and envious, which can lead to feelings of condescension.

Experiencing difficulties logging into Instagram<sup>®</sup> can evoke various emotions such as frustration, annoyance, disappointment, and even anxiety.<sup>30</sup> Given that social media platforms like Instagram<sup>®</sup> have become deeply intertwined with our social lives, being unable to access them can lead to feelings of disconnection from friends and online communities. This loss of connection may contribute to a sense of helplessness and a perceived loss of control, which can be emotionally taxing. The study found that 40.6% of participants agreed with these sentiments.

According to 55.7% of the participants, Instagram<sup>®</sup> has a significant impact on their quality of life. Influencers in the fields of fashion and beauty enjoy a great deal of popularity on the platform, which they use to showcase their individual tastes and promote the newest trends.<sup>31</sup> Users frequently find themselves motivated to try out novel looks, buy particular goods, or copy their favorite trends by following these influencers.<sup>32</sup> The overwhelming consensus among the survey participants demonstrates the impact of ubiquitous influence of Instagram<sup>®</sup> on users' choices in clothing and cosmetics.

According to 49.5% of the survey participants, an excessive utilization of social media sites like Instagram<sup>®</sup> is associated with a lack of physical activity. Spending a lot of time on social media can prevent people from exercising, which results in lower levels of physical activity.<sup>33</sup> As reported by 52.1% of the study's participants, using Instagram<sup>®</sup> excessively while studying dentistry might be harmful to the students' mental and emotional health. Increased levels of worry, despair, tension, and even the possibility of addiction is included in this.<sup>34</sup> When comparing oneself to classmates or influencers on social media, dental students may also feel inadequate and engage in social comparison. Additionally, excessive social media use can lead to poor academic performance, decreased productivity, and attention problems.

Dental students must be careful with their social media use and set up good limits in order to protect their mental and emotional wellbeing. This entails establishing usage guidelines and developing a balanced attitude towards technology so that they may put their wellbeing first and continue to achieve at their best academically.

The reported questionnaire has numerous noteworthy strengths. For initially, it has an ample sample size, including both genders, which increases the applicability of its findings. It also digs deeper into the details of Instagram<sup>®</sup> usage, such as follower count, motivations for usage, time spent on the platform, and posting behaviors, providing a thorough grasp of the issue. The questionnaire expertly captures participants' thoughts and perceptions of Instagram<sup>®</sup>, offering light on its impact on social interactions, behavior, and mental health. However, the potential response biases and a cross-sectional design that restricts the scope of comprehension and causal inference are the potential limitation of the current research.

## Conclusion

In conclusion, this study highlights the significant impact of Instagram<sup>®</sup> on the lives of dental students and professionals. It emphasizes the prevalence of Instagram<sup>®</sup> usage among this group and explores its influence on social relationships, distraction levels, and mental and emotional well-being. The findings underscore the importance of maintaining a balance between social media use and academic/personal responsibilities, while also highlighting the need for awareness and education regarding Instagram<sup>®</sup> features and implications. To examine Instagram's impact more thoroughly and take into account a range of experiences and emergent affects through time, future research needs to incorporate qualitative methodologies and longitudinal investigations.

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## Disclosure

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