

Social Media Usage Patterns and Their Perceived Impact on Learning, Academic Activities, and Well - Being Among MBBS Students in India: A Nationwide Cross - Sectional Study

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Abstract

Background: Social media has become an important component of medical education, providing students with easy access to educational resources, academic discussions, and examination-oriented content. However, its influence on learning and well-being remains a subject of debate. **Material and Methods:** A nationwide cross-sectional questionnaire-based study was conducted among undergraduate MBBS students from government and private medical colleges across India. Data were collected using a structured online questionnaire circulated through social media platforms. A total of 1,075 valid responses were analyzed using descriptive statistics and Chi-square tests. **Results:** Females constituted 56.9% of participants, while 43.1% were males. The majority of students (37.0%) reported spending 3 - 4 hours daily on social media. YouTube (90.0%), Telegram (82.0%), WhatsApp (75.0%), and Instagram (65.0%) were the most commonly used platforms. Educational learning was the primary purpose of social media use for 42.0% of students. Most participants used social media for watching educational videos (88.0%), solving MCQs (78.0%), accessing notes and PDFs (72.0%), and examination preparation (68.0%). Nearly half (48.0%) perceived a positive impact on academic activities, while 59.9% reported disturbed sleep quality. Easier understanding of difficult topics (78.0%) and quick revision before examinations (72.0%) were the most frequently reported advantages. **Conclusion:** Social media serves as a valuable supplementary learning resource for MBBS students, enhancing accessibility and academic engagement. However, concerns regarding sleep disturbance, distraction, and content reliability highlight the need for responsible and evidence-based utilization within medical education.

Keywords: Social media, Medical education, MBBS students, Digital learning, Academic performance, Sleep quality.

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INTRODUCTION

A decade ago, medical students mainly depended on textbooks, classroom lectures, practical sessions, and library resources for their studies. Learning was largely confined to classrooms and institutions, and access to educational material outside college was often limited.^[1]

Over the years, the increasing availability of smartphones and affordable internet services has changed the way students learn and communicate. Today, most medical students have easy access to online educational resources, and a large part of their academic as well as social activities takes place through digital platforms. In the modern era of medical education, social media has become an important tool for learning, communication, and sharing information.^[2]

India has one of the largest populations of internet and social media users in the world. Medical students are among the frequent users of these platforms because they require quick access to study materials, educational videos, examination resources, and peer discussions. Applications such as WhatsApp, Instagram, YouTube, Telegram, and X are

commonly used for both academic and non-academic purposes.^[3] The importance of online platforms increased significantly during the COVID-19 pandemic. With the closure of colleges and suspension of offline classes, teaching and learning shifted to online modes. Students attended virtual lectures, webinars, and online discussions, while social media platforms became important sources of educational content.^[4] Even after the pandemic, the use of digital platforms for learning has continued to grow.^[5]

Medical students are able to use social media as an educational

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aid. It also enables students to clarify difficult concepts by following videos, diagrams, animations, short lectures, clinical discussions, and question based learning, and it allows students to revise concepts further, solve multiple-choice questions, Access notes, Watch recorded lectures and prepare for professional examinations too.^[6] Many students use these platforms to revise concepts further, solve multiple-choice questions, to access notes and watch recorded lectures, solve the concepts in clinical discussions or prepare for professional examinations as well. Contouring and simplified access and availability of content have made learning more flexible and convenient.^[7]

But, as social media becomes more and more important in the academic world, there are a number of concerns as well. Coaching channels, short-form content and educational influencers are the main technologies students use, rather than lessons and textbooks. These sources can help with learning and revision but the information they provide may not be accurate, evidence-based or follow the prescribed syllabus. In addition, teachers can teach the same content in a variety of different ways, and that may sometimes cause confusion among students. Social media can also negatively impact attendance, study skills, focus, sleep, daily routines, and more if used excessively.^[8,9]

Social media are becoming an integral part of medical education, and it is crucial to know how students use these and how they think about them. Such information may help educators and medical institutions determine whether selected social media based educational resources can be effectively integrated into teaching practices while ensuring continued reliance on authentic academic sources and evidence based learning.^[10]

Therefore, this study was conducted to assess the pattern of social media usage among MBBS students across India and to evaluate its perceived impact on learning, academic activities, examination preparation, study habits, sleep quality, and overall well-being. The study also explored students' perceptions regarding the incorporation of social media based resources into formal medical education.

MATERIALS AND METHODS

Study Design and Setting

A nationwide cross-sectional questionnaire-based study was conducted among undergraduate MBBS students studying in government and private medical colleges across India. The purpose of the study was to understand the social media usage pattern and to find the students' perception about the effect of social media on learning and study and education experience.

Study Population

Undergraduate MBBS students of various years from medical college of all over India were included in the study. There were 1,075 valid responses received and analysed. Questionnaires were discarded and counts were not made of multiple responses.

Study Tool

Structured self-administered questionnaire designed after literature review and the data collected using Google Forms. The questions in the questionnaire were both multiple choice and close ended. This survey link was shared online on WhatsApp, Telegram, Instagram, and through student networking groups. The survey was voluntary, and subjects were told the aims of the survey before they finished the survey. Pseudo-anonymity and confidentiality of the answers were ensured during the study, and the return of the completed questionnaire was understood and interpreted as informed consent to participate.

Inclusion Criteria

- Undergraduate MBBS students studying in recognized medical colleges across India.
- Students willing to participate voluntarily in the study.
- Students who completed the questionnaire.

Exclusion Criteria

- Incomplete questionnaire responses.
- Duplicate submissions.
- Responses from individuals other than MBBS students.

Questionnaire Domain and Variables Assessed

S. No.	Domain	Variables Assessed
1	Demographic Information	Gender
2	Social Media Usage Pattern	Average daily duration of social media use (<1 hour, 1–2 hours, 3–4 hours, 5–6 hours, >6 hours)
3	Preferred Social Media Platforms	YouTube, Telegram, WhatsApp, Instagram, X (Twitter), Facebook
4	Primary Purpose of Social Media Use	Educational learning, Communication, Entertainment, News and updates, Professional networking
5	Educational Utilization of Social Media	Watching educational videos, Solving MCQs, Accessing notes/PDFs, Examination preparation, Attending online lectures, Academic discussion groups, Clinical learning content
6	Preferred Learning Resource for Understanding Difficult Topics	Standard textbooks, Classroom lectures, Social media educators, Coaching platforms, Combination of all resources
7	Dependence on Social Media for Learning	Following medical educators/content creators; daily use for examination preparation; last-minute revision; preference over textbooks; preference over classroom lectures
8	Perceived Impact on Academic Activities	Positive impact, Negative impact, No significant impact
9	Perceived Effect on Sleep Quality	Improved sleep quality, No effect, Disturbed sleep quality
10	Reliability of Educational Content on Social Media	Always reliable, Mostly reliable, Sometimes reliable, Rarely reliable, Never reliable
11	Perception Regarding Incorporation into Medical Education	Formal incorporation into teaching; supplementary learning material; should not be incorporated; not sure
12	Advantages and Concerns Associated with Social Media Use	Advantages: Easier understanding, quick revision, better MCQ preparation, easy accessibility. Concerns: Information overload, distraction, reduced concentration, reduced textbook reading, conflicting explanations

Statistical Analysis and Ethical Consideration

The data were entered into the MicroSoft Excel and analysed with SPSS version 26.0. Categorical variables were presented in frequencies and percentages. There was no

personal or identifying information gathered and participation was voluntary. All participants in the study were kept at the level of confidentiality and anonymity. Submission of the completed questionnaire was considered as implied informed consent.

RESULTS

Table 1: Demographic Characteristics of Participants)

Variable	Number (n)	Percentage (%)
Male	463	43.1
Female	612	56.9

Table 2: Average Daily Duration of Social Media Use

Duration	Number (n)	Percentage (%)
Less than 1 hour	86	8.0
1 - 2 hours	269	25.0
3 - 4 hours	398	37.0
5 - 6 hours	215	20.0
More than 6 hours	107	10.0

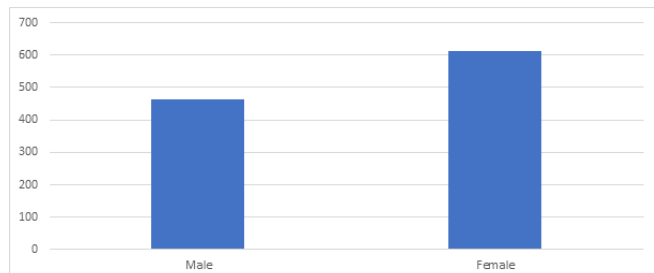


Figure 1. Bar Diagram of Demographic Characteristics of Participants

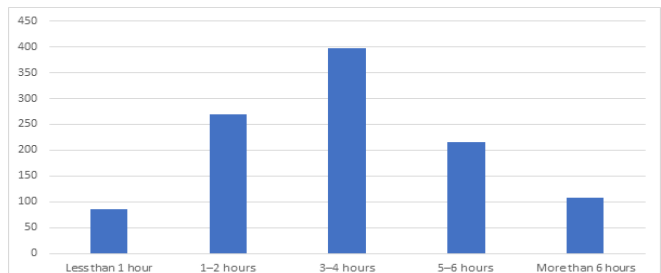


Figure 2: Bar Diagram of Average Daily Duration of Social Media Use.

Table 3: Preferred Social Media Platforms Used by MBBS Students

Platform	Number (n)	Percentage (%)
YouTube	968	90.0
Telegram	882	82.0
WhatsApp	806	75.0
Instagram	699	65.0
X (Twitter)	237	22.0
Facebook	151	14.0

Table 4: Primary Purpose of Social Media Use

Purpose	Number (n)	Percentage (%)
Educational learning	452	42.0
Communication	205	19.1
Entertainment	269	25.0
News and updates	96	8.9
Professional networking	53	4.9

Table 5: Educational Utilization of Social Media

Activity	Number (n)	Percentage (%)
Watching educational videos	946	88.0
Solving MCQs	839	78.0
Accessing notes/PDFs	774	72.0
Examination preparation	731	68.0
Attending online lectures	613	57.0
Academic discussion groups	559	52.0
Clinical learning content	484	45.0

Table 6: Preferred Learning Resource for Understanding Difficult Topics

Resource	Number (n)	Percentage (%)
Standard textbooks	183	17.0
Classroom lectures	108	10.0
Social media educators	280	26.0
Coaching platforms	172	16.0
Combination of all resources	332	31.0

Table 7: Dependence on Social Media for Learning

Statement	Yes	No
Follow medical educators/content creators	914	161
Use social media daily for exam preparation	731	344
Use social media for last-minute revision	806	269
Prefer social media over textbooks for quick learning	624	451
Prefer social media over classroom lectures	355	720

Table 8: Perceived Impact of Social Media on Academic Activities

Response	Frequency	Percentage (%)
Positive impact	516	48.0
Negative impact	279	26.0
No significant impact	280	26.0

Table 9: Perceived Effect of Social Media on Sleep Quality

Response	Frequency	Percentage (%)
Improved sleep quality	76	7.1
No effect	355	33.0
Disturbed sleep quality	644	59.9

Table 10: Reliability of Educational Content Available on Social Media

Response	Frequency	Percentage (%)
Always reliable	75	7.0
Mostly reliable	398	37.0
Sometimes reliable	387	36.0
Rarely reliable	172	16.0
Never reliable	43	4.0

Table 11: Students' Perception Regarding Incorporation of Social Media into Medical Education

Response	Frequency	Percentage (%)
Should be formally incorporated into teaching	409	38.0
Should be used as supplementary learning material	452	42.0
Should not be incorporated	97	9.0
Not sure	117	10.9

Table 12: Major Advantages and Concerns Reported by Students

Theme	Frequency	Percentage (%)
Easier understanding of difficult topics	839	78.0
Quick revision before examinations	774	72.0
Better MCQ preparation	699	65.0
Easy accessibility of learning material	645	60.0
Information overload	516	48.0
Distraction and reduced concentration	602	56.0
Reduced textbook reading	409	38.0
Conflicting explanations by different educators	484	45.0

Table 13: Acceptance of Social Media Integration into Medical Education Among MBBS Students

Response	Frequency (n)	Percentage (%)
Support incorporation into medical education	861	80.1
Do not support incorporation	97	9.0
Not sure	117	10.9
Total	1075	100.0

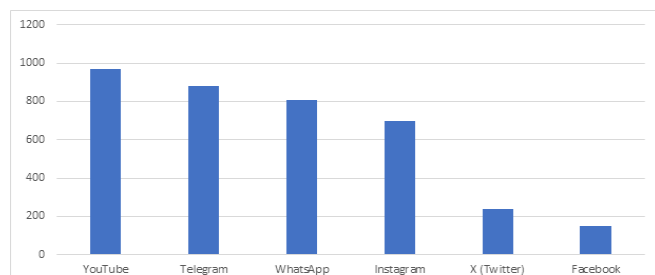


Figure 3: Bar Diagram of Preferred Social Media Platforms Used by MBBS Students

A total of 1,075 MBBS students from medical colleges across India participated in the study, of whom 56.9% were females and 43.1% were males. Most participants reported spending 3 - 4 hours daily on social media, with YouTube, Telegram, WhatsApp, and Instagram emerging as the most commonly used platforms. Educational learning was the predominant purpose of social media use, and a substantial proportion of students utilized these platforms for educational videos, MCQ practice, accessing study materials, and examination preparation.

A large majority of participants followed medical educators and content creators and regularly used social media for revision and

examination-related activities. Nearly half of the students perceived a positive impact of social media on academic activities, while more than half reported disturbed sleep quality. Most respondents considered online educational content to be either mostly or sometimes reliable. Notably, 80.1% supported the incorporation of social media into medical education as either a formal teaching component or a supplementary learning resource.

Despite medical education traditionally relying on faculty members who undergo many years of undergraduate, postgraduate, and specialist training to attain subject expertise and teaching competence, a considerable proportion of students reported using social media educators for understanding difficult topics and examination preparation. These findings highlight the growing influence of digital educational platforms and suggest that students increasingly view social media as a valuable adjunct to conventional teaching, while continuing to recognize the importance of expert-led classroom instruction as the foundation of medical education.

DISCUSSION

In the present study, the usage and effects of social media on students learning and academic activities were assessed among 1075 MBBS students from all over India. The results suggest that social media is an influential additional learning tool for medical students, affecting the preparation for exams, the comprehension of concepts, revision methods and the provision of resources.

Most of the respondents found that they spend from 3 to 4 hours a day on social media. Garg et al. found that the most common social networking platform use among students was approximately 3 - 4 hours per day of social media,^[11] and similarly, Arun et al. found that the majority of students used social media for 1 - 3 hours daily,^[12] with Bhandarkar et al. reporting that 41.5% of students used social media for up to 3 hours per day.^[13] The overall results indicate that social networks are a part of the daily life routines of medical students.

In the present study, WhatsApp, YouTube, Telegram and Instagram were the most commonly used platforms. The same finding was noted by Bhandarkar et al., who found that WhatsApp (98.25%) and YouTube (91.75%) were the most maximum utilized apps by Medical Students.^[13] Similarly, Arun et al. found that YouTube (98.3%), WhatsApp (97.4%) and Instagram (83.8%) are the most popular educational platforms.^[12] These applications also have a wide adoption due to the educational content, academic discussions, exam-specific material, and their accessibility.

Majority of the students in the current study had adopted social media platforms to access the learning videos, MCQs, notes, pdfs and preparation for exams. This was also observed by Bhandarkar et al., as majority of students were found to use social media for health-related information, assignments, preparing seminar and preparing for test.^[13] Additionally, Arun et al. showed that social media is used extensively for educational engagement and concept

reinforcement.^[12] This is an observation which sheds light on the increasing importance of digital learning resources in the present-day medical education.

A significant number of the subjects in the current study mentioned that social media gave them their understanding of the difficult topics and assisted them to revise their learning before the exams. Similar results were seen in the study led by Arun et al., in which most of the students believed that social media helped them in their medical education and they could recall the concepts better than that which they learned from the classroom by their teachers.^[12] The provision of visual explanations, animation, mnemotechnics, brief notes, and short educational videos could account for improved conceptual knowledge and learner engagement.

Almost half of the respondents indicated a positive effect of social media on academic activities. Garg et al. recorded similar results with about one third of students rating social media to be helpful in their academic life, and others were unverifiable that a significant effect occurs.^[11] Bhandarkar et al. found a negative correlation between excessive social media use and academic performance, but it was not strong.^[13] The differences could be due to the fact that there is growing availability of educational structured materials and the ways students use social media to engage with education.

However, the present study identified a number of concerns, which are highlighted below. Over 50 percent of respondents said they had an impaired sleep quality due to their social media consumption, and a number of respondents said they were distracted or had decreased concentration when using social media. These findings are similar to those of Saha et al., who saw sleep disturbances and other health concerns in medical students who heavily depend on social media.^[14] Garg et al. also noted some sleep problems among social media users, highlighting the possible negative effects of excessive screen time.^[11]

One aspect that was identified was that many students raised concerns about the veracity of information they could find on social media and reported that they were confused over different explanations by various instructors. Similar results were obtained by Arun et al. who also noted that students used social media as a learning tool however they continued to have concerns about the accuracy of the content and retention over time.^[12] The results demonstrate the need to confirm information from the Internet with the aid of any standard books, professors' advice and the principle-based resources.

Most of the participants were either pro or supportive of using social media in medical education as part of the curriculum or as an adjunct to it. This finding was corroborated in the study by Arun et al., which concluded that at least a positive linking of social media with conventional teaching is deemed by most students.^[12] This indicates that students don't consider social media as a replacement for traditional medical education and training, and traditional textbooks.

All in all the results of the current study are fairly Concordant to the existing literature. Social media has become a tool of great value for instruction, making learning content more accessible, promoting revision and better comprehension of complex concepts. But, the points of overuse, sleep interference, distraction and information authenticity raise the issue of responsible and evidence-based use of social media in medical

education.

CONCLUSION

In the present scenario, social media is now an integral part of medical education, providing a valuable source for MBBS students to access educational material, revision notes, MCQs, and have peer learning. This is due to the changing learning preferences of students, especially when it comes to clarifying concepts quickly, preparing exams, and allowing students to learn at their own pace.

Yet, the drawbacks of too much screen time, sleep issues, decreased focus, information overload, and differing information quality and reliability are also considerable. Digital platforms can offer a variety of teaching styles and educational materials, but they cannot work without the curriculum, clinical experience, mentorship, and subject matter knowledge that should come from years-long training and professional development by medical educators.

Social media should thus be seen as an educational supplement, not a replacement for the traditional textbook and classroom instruction. The best way is to combine evidence-based digital resources with traditional teaching to take advantage of both. The use of social media can be an asset in medical education and contributing to the growth of competent, informed and lifelong learners when used responsibly and with appropriate medical education supervision.

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Conflicts of interest

There are no conflicts of interest.

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