

A Cross-Sectional Study to Assess the Contribution of Fear of Missing Out (FOMO) to Learning Burnout Among Medical Students

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Abstract:

Introduction: As of December 2021, there were more than 6.26 billion smartphone subscriptions globally, translating to an approximate 67% penetration rate across the world population. **Aims and Objectives:** To assess the prevalence of Fear of Missing Out (FOMO) among medical students, evaluate their levels of learning burnout, and examine the relationship between FOMO and burnout dimensions, particularly emotional exhaustion and academic inefficacy.

Material and Methods: A cross-sectional study was conducted at Subharti Medical College, Meerut, Uttar Pradesh, India. The study population comprised undergraduate MBBS students, who experienced high academic pressure and extensive digital engagement, making them an appropriate group for examining psychological variables such as FOMO and learning burnout. Data were collected from MBBS students using a structured, self-administered questionnaire distributed through Google Forms. **Results:** This study examined the relationship between FOMO and learning burnout among 200 medical students using validated self-report measures. The findings revealed that most students experienced moderate levels of FOMO and burnout, particularly in the dimensions of emotional exhaustion and cynicism. Statistical analysis showed a moderate positive and highly significant correlation ($r = 0.41$, $p < 0.001$) between FOMO and burnout. **Conclusion:** After analysis of the recorded responses, the average FOMO levels were found to be moderate in severity. The findings suggested that higher levels of FOMO were associated with increased learning burnout among medical students, highlighting the need for interventions aimed at promoting healthy digital habits and psychological well-being.

Keywords: Fear of Missing Out (FOMO), Learning Burnout, Emotional Exhaustion, Academic Inefficacy, Psychological Well-being.

Introduction

Mobile internet technologies and the proliferation of social media, smartphones have become an integral part of everyday life. As of December 2021, there were more than 6.26 billion smartphone subscriptions globally, translating to an approximate 67% penetration rate across the world population.¹ Smartphones offer undeniable benefits in terms of

accessibility, communication, and productivity, their overuse—particularly among younger populations—has raised significant public health concerns. One of the most widely discussed issues is Problematic Smartphone Use (PSU), which includes behaviours such as excessive screen time, compulsive checking, and an inability to control smartphone usage despite harmful consequences. In more severe cases, this

behaviour escalates into smartphone addiction, characterized by psychological dependency and functional impairments in social, academic, or occupational settings.² College students are particularly susceptible to PSU due to their high dependence on smartphones for academic tasks, social interaction, and entertainment. A growing body of research indicates that the prevalence of smartphone addiction among college students ranges widely from 10% to 46% across various countries.³ Prevalence has been notably exacerbated by the COVID-19 pandemic, which shifted academic activities online and increased screen time.⁴ Among medical students, the issue is even more alarming. Several studies report smartphone addiction rates exceeding 35–40% in this group, which is particularly concerning given the intense academic pressures and time constraints inherent in medical training.⁵ A major psychological factor contributing to PSU is FOMO—a pervasive apprehension that others might be engaging in rewarding experiences from which one is absent. FOMO leads individuals to compulsively monitor social media, striving to remain connected with peers and updated with ongoing events. A strong predictor of smartphone addiction, particularly among young adults and students. Research demonstrated that individuals with high levels of FOMO are more likely to seek social reassurance and validation through digital platforms, which contributes to excessive smartphone use.⁶ FOMO has been shown to mediate the relationship between social anxiety and problematic digital engagement, further reinforcing the cycle of compulsive smartphone use.⁷ Consequences of PSU and FOMO extend beyond mere distraction; they significantly impact students' psychological well-being and academic performance. Excessive smartphone use is linked with poor sleep

quality, impaired emotional regulation, reduced concentration, and lower academic achievement.⁸ One important outcome of PSU among students is learning burnout. Learning burnout is defined as a psychological syndrome characterized by emotional exhaustion, a sense of detachment or depersonalization towards academic activities, and a decreased sense of personal accomplishment.⁹ Medical students are particularly prone to burnout due to heavy academic loads, long hours of study, clinical responsibilities, and minimal time for rest and recovery. Global studies suggest that between 45% and 71% of university students experience academic burnout, with medical students showing some of the highest rates.^{10,11}

AIMS AND OBJECTIVES

Primary Objective

To measure the prevalence and severity of FOMO among medical students. This objective aims to determine how widespread FOMO is within the medical student population and to what degree students experience it. Through validated FOMO scales, the study will provide data on both the frequency and intensity of FOMO related thoughts and behaviors, helping to build a clearer profile of at-risk individuals.

Secondary Objectives

1. To evaluate the levels of learning burnout using standardized tools. Burnout, particularly in an academic context, is typically measured across dimensions such as emotional exhaustion and cynicism. This study will utilize a recognized instrument (e.g., the Maslach Burnout Inventory-Student Survey or similar) to assess the overall burnout levels in the target population, offering insights into the psychological toll of medical education.

2. To examine the relationship between FOMO and burnout subcomponents (emotional exhaustion and academic inefficacy). Rather than treating burnout as a unidimensional construct, this objective seeks to dissect the specific components most affected by FOMO. For instance, students with high FOMO may be particularly prone to emotional exhaustion due to constant connectivity demands, or to academic inefficacy as a result of fragmented attention and reduced academic engagement. This nuanced analysis will help identify which aspects of burnout are most susceptible to the influence of FOMO.

MATERIALS & METHODS

STUDY SETTING

The study was conducted at Subharti Medical College, located in Meerut, Uttar Pradesh, India. Subharti Medical College is a recognized institution offering undergraduate and postgraduate medical education. The college provides a diverse and academically intense environment, making it a suitable setting for examining psychological variables such as Fear of Missing Out (FOMO) and learning burnout among students.

STUDY POPULATION

The target population for this study comprises undergraduate medical students enrolled in the MBBS program at Subharti Medical College. These students are typically subjected to high academic and social demands, making them an appropriate group for exploring the psychological impacts of FOMO and smartphone-related behaviour.

STUDY DESIGN

This is a cross-sectional study, which involves collecting data at a single point in time to analyze the prevalence and relationship between FOMO and learning burnout. A cross-sectional design is appropriate for identifying correlations and trends

within the population without requiring long-term follow-up.

SAMPLE SIZE

The sample size for this study is set at 200 participants, selected based on feasibility, availability, and voluntary participation. This sample is sufficient for preliminary statistical analysis while being practical within the given time frame and resources.

SAMPLING TECHNIQUE

A purposive sampling technique will be used wherein eligible participants will be selected intentionally based on predefined inclusion and exclusion criteria. Data will be collected through a Google Forms questionnaire, allowing efficient distribution, anonymity, and convenience for the participants.

AGE GROUP

Participants will be within the age range of 19 to 25 years, which corresponds to the typical age of undergraduate medical students in India.

INCLUSION CRITERIA

- a) Undergraduate medical students currently enrolled in an MBBS or equivalent program.
- b) Students aged between 19 to 25 years.
- c) Students who own and regularly use a smartphone (minimum daily usage).
- d) Students who provide informed consent to participate in the study.

EXCLUSION CRITERIA

- a) Students with self-reported psychiatric or neurological disorders that could influence emotional or academic functioning.
- b) Students currently undergoing psychological or psychiatric treatment for anxiety, depression, or academic burnout.
- c) Students who submit incomplete responses or fail to complete the questionnaires.

RESEARCH TOOLS

- a) FOMO Scale: A validated self-report instrument used to measure the intensity of Fear of Missing Out among individuals.
- b) Learning Burnout Scale: A standardized tool used to assess dimensions of academic burnout, including emotional exhaustion and cynicism.
- c) Both tools will be adapted as per ethical guidelines and contextual relevance.

DATA ANALYSIS

Data will be collected via Google Forms and exported to Microsoft Excel for analysis. Descriptive statistics such as mean, frequency, and percentages will be calculated to summarize key study variables. Correlation analysis will be conducted to examine the relationship between Fear of Missing Out (FOMO) and learning burnout. Where necessary, advanced statistical analyses (such as linear regression) will be performed using Microsoft Excel add-ins or statistical plugins to assess predictive relationships [12-15]. Data visualization will be done using graphs and tables to clearly present findings.

DURATION OF STUDY

The total duration of the study is 2 months, which includes time allocated for questionnaire distribution, data collection, validation, data entry, analysis, and report writing.

STUDY OVERVIEW

This study aims to investigate the contribution of Fear of Missing Out (FOMO) to learning burnout among undergraduate medical students. The research is grounded in a conceptual framework that recognizes FOMO as a potential psychological stressor in today's digitally connected academic environments.

Using a cross-sectional survey design and validated measurement tools, this study seeks to:

- Measure the prevalence and intensity of FOMO

- Assess levels of learning burnout (emotional exhaustion and cynicism)

- Examine the relationship between FOMO and burnout.

DATA COLLECTION PROCEDURE

After approval from the Institutional ethical committee, informed consent will be obtained from all the participants before data collection. The purpose of the study, assurances of confidentiality, and voluntary participation will be clearly explained. For Participant Recruitment a total of 200 undergraduate medical students will be selected through purposive sampling, based on predefined inclusion and exclusion criteria. For Survey Administration Participants will complete a structured self-report questionnaire, which includes:

- The Fear of Missing Out Scale (Przybylski et al., 2013) [1]

- A standardized Learning Burnout Scale, measuring:

- Emotional Exhaustion
- Cynicism

For Mode of Data Collection. The survey was administered online via Google Forms. Participants will be instructed to respond independently and honestly. For Data Entry and Storage all responses will be securely exported to Microsoft Excel for organization and data cleaning. Any identifiable information will be anonymized to protect participants' confidentiality.

DATA ANALYSIS PLAN

Data will be analysed using Microsoft Excel. The following analyses will be conducted:

- Descriptive Statistics (mean, frequency, percentage) for study variables

- Correlation Analysis to assess the strength and direction of the relationship between FOMO and learning burnout

Regression Analysis to evaluate whether FOMO

Results

The study investigated the contribution of Fear of Missing Out (FOMO) to learning burnout among 200 medical students using validated self-report measures.

Analysis revealed a significant levels of FOMO and its

significantly predicts learning burnout levels

If needed, Excel plugins or additional statistical tools may be used for advanced analysis

prevalence among the selected sample. We also calculated the mean score and correlational coefficient (r) of burnout index dimensions including emotional exhaustion and cynicism.

Table-1: Depiction of FOMO scale

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I fear others have more rewarding experiences than me	10.90%	21.80%	43.50%	19%	4.80%
I fear my friends have more rewarding experiences than me	13.60%	29.30%	36.10%	19.70%	1.30%
I get worried when I find out my friends are having fun without me	10.20%	24.50%	31.30%	29.90%	4.10%
Sometimes, I wonder if I spend too much time keeping up with what is going on	9.70%	25.70%	32.60%	23.70%	8.30%
I get anxious when I don't know what my friends are up to	13%	23.30%	34.20%	27.40%	2.10%
It bothers me when I miss an opportunity to meet up with friends	4.10%	15.60%	36.10%	33.30%	10.90%
When I miss out on a planned get together it bothers me	6.10%	15.10%	28.80%	39.70%	10.30%
It is important that I understand my friends "in jokes"	8.20%	15.60%	32.70%	32%	11.50%
When I have a good time it is important for me to share the details online	30.60%	32.70%	24.50%	8.80%	3.40%
When I go on vacation, I continue to keep tabs on what my friends are doing	23.40%	40%	26.90%	9.70%	0.00%

Table-1 shows the highest percentage of respondents fall under the “Neutral” category, indicating that a large portion of participants do not experience strong Fear of Missing Out and are emotionally balanced

regarding their friends’ activities and social experiences. This suggests moderate and controlled social media and peer influence, rather than excessive anxiety or dependence.

Table-2: FOMO Score Interpretation

Score	Percentage
High FOMO	10.10%
Moderate FOMO	71.10%
Low FOMO	18.80%

Table -2 shows 10.1% - high FOMO, 71.1% -

moderate FOMO and 18.8% - low FOMO levels.

Table-3: Prevalence of Emotional Exhaustion Score Under Burnout Scale

Low FOMO	Moderate FOMO	High FOMO	Mean Score	Interpretation
I feel exhausted after studying for a whole day.				
19	29	101	3.75167785	high exhaustion
I feel that I have no energy left after study				
37	51	61	3.18120805	Moderate exhaustion
I feel tired of studying				
43	47	59	3.14765101	Moderate exhaustion
I feel emotionally drained by learning				
78	51	20	2.51677852	Low exhaustion
I need to rest after long academic efforts				
6	37	106	3.85234899	high exhaustion
I feel worn out by my study workload				
20	58	71	3.43624161	moderate exhaustion
I dread starting academic tasks				
28	73	48	3.23489933	moderate exhaustion
I feel mentally exhausted by study demands				
36	51	62	3.21276596	moderate exhaustion

Table-4: Prevalence of Cynicism

Low FOMO	Moderate FOMO	High FOMO	Mean Score	Interpretation
I rarely plan my study time				
62	33	54	2.90604027	moderate cynicism
I skip classes more often than I should.				
92	27	30	2.3445946	moderate cynicism
I postpone important academic tasks.				
72	31	46	2.69798658	moderate cynicism
I neglect assignments until exams approach.				
54	34	61	2.98648649	moderate cynicism
I frequently arrive late or miss lectures.				
81	35	33	2.41216216	moderate cynicism
I delay learning activities unnecessarily				
74	37	38	2.68707483	moderate cynicism

Table-5: Final Burnout Index with Its Level Including Exhaustion and Cynicism Levels

	Percentage	Mean Score	Interpretation
Overall Burnout Index	33.3%	2.982043618	Moderate Burnout
Exhaustion Overall Mean	36.8%	3.291696416	Moderate Exhaustion
Cynicism Overall Mean	29.9%	2.67239082	Moderate Cynicism

CORRELATION BETWEEN FOMO AND BURNOUT INDEX

(SCATTER PLOT BETWEEN BURNING PER STUDENT AND AVERAGE FOMO SCORE)

INTERPRETATION FROM THIS SCATTER PLOT

1) X axis = burning index per student

2) Y axis = average FOMO score per student

3) **Points** = individual student response data

4) **Line** = regression line (trend line)

(as per the graph above, the slope of regression line is positive as B.I increases, the predicted FOMO also increases).

FROM THE STATISTICS

Through the responses we find out as follows

1) Correlation coefficient (r) = 0.40975669 [this indicates a **moderate positive correlation** between FOMO score and burnout index per student]

2) T- STATISTICS = 5.446244 and p - value = 0.000000211

[This shows highly significant ($p < 0.05$, $p1$ even $p < 0.001$)

Overall interpretation:

1) Students with higher burnout index are more likely to have high FOMO score

2) The correlation is **moderate, positive** and **highly statistically significant**

3) Practically, this suggests that burnout and FOMO are meaningfully linked or correlated, but FOMO is not determined by burnout alone-other confounding factors like psychological, social or personal factors also play roles.

DISCUSSION

The present study demonstrates a significant association between Fear of Missing Out (FOMO) and learning burnout among medical students, with findings indicating predominantly moderate levels of both constructs. The high proportion of students experiencing moderate FOMO (71.1%) suggests that while extreme social anxiety is uncommon, a substantial number of students remain psychologically influenced by peer activities and social comparison. This aligns with the conceptualization of FOMO as a pervasive apprehension that others might be having rewarding experiences in one's absence, often intensified by social media engagement (1).

The predominance of neutral responses in the FOMO scale indicates that most students maintain a relatively balanced emotional response toward their peers' social experiences. However, the presence of agreement in several items related to missing social opportunities reflects underlying concerns about exclusion. Previous

studies have similarly reported that university students frequently experience moderate FOMO due to increased reliance on digital platforms for social interaction, which reinforces constant comparison and perceived social deficits (16,17).

Emotional exhaustion emerged as the most prominent dimension of burnout in this study, with several items reflecting high mean scores. This finding is consistent with earlier research indicating that medical students are particularly vulnerable to exhaustion due to prolonged academic demands, high expectations, and limited recovery time (4,8). Emotional exhaustion is often considered the core component of burnout and tends to precede other dimensions such as cynicism and reduced professional efficacy (18).

Cynicism levels in the present study were found to be moderate across all items, suggesting a tendency toward academic disengagement, including procrastination and irregular participation in learning activities. These findings are in agreement with previous literature, which indicates that students experiencing academic stress may develop avoidance behaviors as a coping mechanism (19). Although the levels of cynicism were not severe, their presence highlights the early stages of burnout that may negatively impact academic performance if not addressed.

The overall burnout index was moderate, with emotional exhaustion slightly higher than cynicism. This pattern supports existing burnout models, which propose that exhaustion is typically the first response to chronic stress, followed by depersonalization or cynicism (18). The moderate levels observed in this study suggest that while students are experiencing significant stress, they have not yet reached severe burnout, providing an opportunity for early intervention.

A key finding of this study is the moderate positive correlation between FOMO and burnout ($r = 0.41$, $p <$

0.001), indicating that higher levels of burnout are associated with increased FOMO. This relationship can be explained through multiple pathways. Students experiencing burnout may seek social connection or distraction through digital platforms, thereby increasing exposure to social comparison and FOMO (20). Conversely, persistent FOMO may lead to reduced concentration, disrupted study routines, and emotional strain, which can contribute to burnout over time (21).

However, the moderate strength of the correlation and the wide variability observed in the scatter plot suggest that FOMO is influenced by additional factors beyond burnout alone. Variables such as personality traits, social media usage patterns, coping strategies, and social support systems have been shown to significantly impact both FOMO and burnout (22,23). This indicates that the relationship between these constructs is complex and multidimensional.

From a practical perspective, these findings highlight the need for targeted interventions to address both academic stress and unhealthy digital engagement among medical students. Strategies such as stress management programs, counseling services, and awareness regarding the psychological effects of excessive social media use may help reduce both burnout and FOMO. Encouraging balanced lifestyles and promoting offline social interactions may also mitigate the negative effects associated with these constructs.

CONCLUSION

This study identified moderate levels of both FOMO and learning burnout among medical students. Emotional exhaustion emerged as the predominant burnout dimension, exceeding cynicism scores. A statistically significant moderate positive correlation between FOMO and burnout suggests that excessive digital connectedness may contribute to academic stress. These findings emphasize the need for targeted

interventions promoting healthy digital habits and psychological well-being among medical students

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