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The Impact of Fear of Missing Out (FOMO) and Social Comparisons on Clinical Medical Students at the University of Bahri 2025

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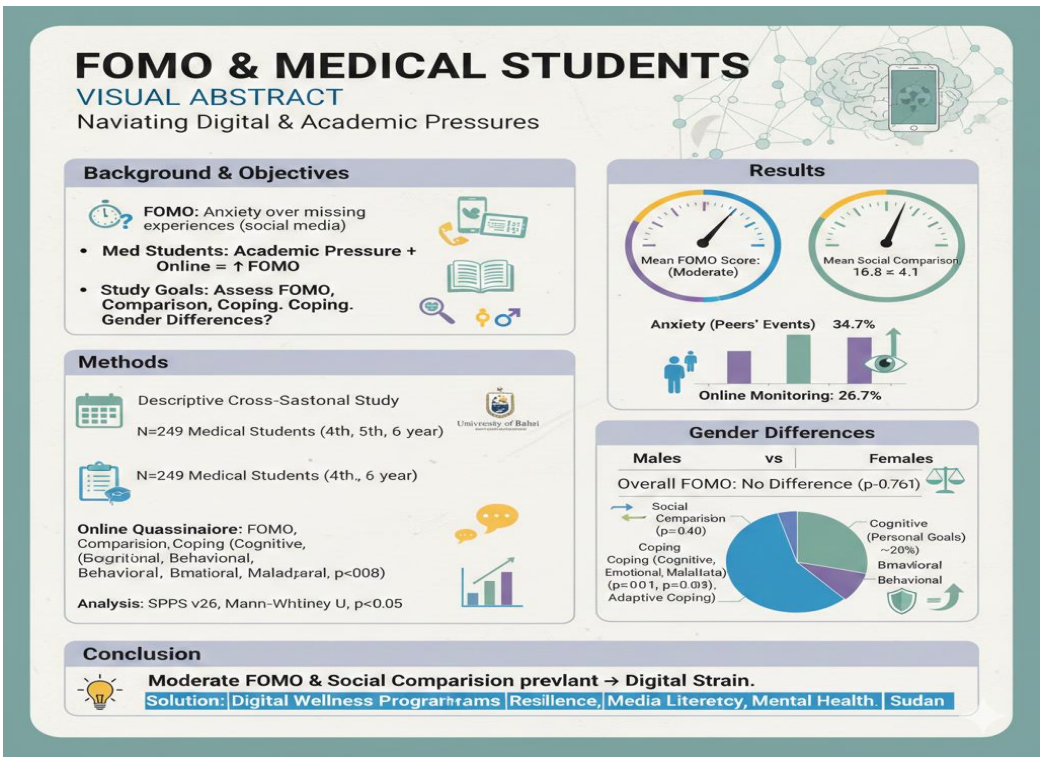

Abstract

Background

Fear of Missing Out (FOMO) *is a modern psychological phenomenon characterized by anxiety over being excluded from rewarding experiences, particularly through social media exposure. Among medical students, the combination of academic pressure and continuous online engagement can intensify FOMO, negatively impact mental wellbeing, and influence social comparison behaviors.*

Objectives: *This study assessed the prevalence of FOMO among clinical medical students at the University of Bahri, examined its relationship with social comparison and coping strategies, and explored gender differences in these patterns.*

Methods: A descriptive cross-sectional study was conducted from August to September 2025 among 249 fourth, fifth, and sixth-year medical students. Data were collected via a structured online questionnaire that measured FOMO, social comparison, and cognitive, emotional, behavioral, and maladaptive coping strategies. A convenience sampling technique was used, and data were analyzed using SPSS v26. Descriptive statistics, Cronbach's α reliability, and Mann–Whitney U tests were applied with a significance level of 0.05.

Results: *The mean FOMO score was 18.9 ± 6.8, indicating moderate levels, while social comparison averaged 16.8 ± 4.1. About 34.7 % reported anxiety when peers enjoyed events without them, and 26.7 % frequently monitored others online. Males scored higher in social comparison ($p = 0.040$), cognitive ($p < 0.001$), emotional ($p = 0.001$), and maladaptive coping ($p = 0.008$) scores, though overall FOMO did not differ by gender ($p = 0.761$). Cognitive coping predominated (63.7 % focused on personal goals), while emotional and behavioral coping were less utilized.*

Conclusion*: Moderate FOMO and active social comparison were prevalent among students, reflecting the psychological strain of digitally connected academic life. Targeted digital wellness programs that foster resilience, media literacy, and adaptive coping are essential to safeguard students' mental health and academic performance.*

Keywords: *Fear of Missing Out; Social Comparison; Coping Strategies; Medical Students; Mental Health; Sudan*

1. Introduction

1.1 Background

Social media has become deeply embedded in daily life, particularly among young people, serving functions that span entertainment, identity formation, status signaling, and relationship maintenance (1). Alongside this pervasive connectivity, a prominent psychological construct has emerged: Fear of Missing Out (FOMO). FOMO is defined as the anxiety that others may be having rewarding experiences without oneself, a definition formalized by Przybylski et al. (2013) (2) and popularly traced back to the term's coining in 1996 by Dr. Dan Harman. In digitally saturated environments, curated feeds intensify awareness of others' activities and achievements, heightening feelings of exclusion and inadequacy.

Multiple mechanisms are implicated in FOMO's emergence and maintenance, including loss aversion, anticipated regret, choice overload, and low mood. High FOMO has been linked to mood disturbances, problematic social media use, fatigue, stress, impaired sleep, and diminished psychological wellbeing; it also appears to mediate associations between social deficits, boredom, depression, and social media engagement. Empirically, the need to belong robustly predicts FOMO (3). At the same time, FOMO itself is associated with poorer psychological wellbeing, manifesting as stress and anxiety when individuals are unable to connect with social platforms (4).

FOMO is closely intertwined with social comparison, a process by which individuals evaluate their abilities, opinions, or status relative to others (5). Social media architectures amplify this tendency by persistently exposing users to others' highlighted successes and positive self-presentations. The social comparison process, classically articulated by Festinger (1954), can have adaptive or maladaptive consequences. Upward comparisons (to better-off others) may motivate improvement, whereas downward comparisons (to worse-off others) can buffer self-esteem (6)(4). In practice, algorithmically curated, achievement-heavy feeds often skew comparisons upward, contributing to rumination, anxiety, and a cycle of checking. Related work indicates that comparison processes can also spill over into digital accumulation behaviors (e.g., "digital hoarding"), with FOMO acting as a mediator of anxiety and persistent comparative monitoring. Taken together, the interaction of FOMO and social comparison appears central in shaping young people's emotional and cognitive responses to social media, with downstream implications that extend to academic functioning and learning behaviors (7).

1.2 Problem Statement

The expansion of mobile Internet and social platforms has rendered smartphones integral across age groups worldwide. Prevalence estimates suggest that smartphone addiction among college students ranges from 10% to 46% across several countries (8) (2). Within this landscape, medical students may be especially susceptible to heightened FOMO due to heavy platform use combined with demanding academic environments. Elevated FOMO is plausibly positioned to exacerbate anxiety, depressive symptoms, poor sleep, and problematic smartphone use.

Recent evidence underscores this concern. In a 2024 Brazilian sample of medical students, the mean FOMO score was 22.08 ± 6.71, positively associated with poorer sleep quality (PSQI = 7.26 ± 3.08) and smartphone addiction (SASSV = 30.21 ± 10.20); 35.2% reported moderate to severe anxiety and 16.9% moderatetosevere depression, both strongly linked with higher FOMO (9). Regionally, a Sudanese study at the University of Khartoum (2021) found that among 333 medical students, 23.6% exhibited moderate levels of both FOMO and Social Networking Intensity (SNI) and 4.8% high levels, with a moderate positive correlation between FOMO and intensity of social media use ($r = 0.53$, $p < 0.001$) (10). Together, these findings suggest that FOMO may be a salient, modifiable correlate of mental health and digital behavior in medical student populations.

1.3 Justification

FOMO is a prevalent sociopsychological phenomenon linked to anxiety, depression, jealousy, dissatisfaction, and maladaptive coping often intensified through social comparison. Medical students represent a high-risk group: long study hours, competitive benchmarking (e.g., grades, research output, electives), and constant exposure to peers' achievements online create fertile ground for FOMO's emotional and behavioral sequelae. Potential consequences include deterioration in mental wellbeing, disruptions to sleep and attentional control, and adverse impacts on academic performance and teamwork, all of which are critical in high-stakes clinical training environments. Characterizing FOMO and its correlates in this population is therefore both timely and actionable for student support services and curricular interventions.

1.4 Objectives

1.4.1 General Objective

To study the FOMO (fear of missing out) among medical students at the University of Bahri.

1.4.2 Specific Objectives

1. To study the effect of FOMO on mental health among medical students.
2. To study the effect of FOMO on academic achievement among medical students.
3. To evaluate the impact of FOMO and social comparison on medical students.
4. To determine whether there are gender differences in the experience of FOMO.
5. To study possible coping strategies used by male and female students in response to FOMO and social comparison.

LITERATURE REVIEW

2.1 General Literature Review

Concept and definitions: The term "Fear of Missing Out" (FOMO) emerged in the early 2000s and gained widespread traction after 2010 (11). It is now codified in major dictionaries as an anxiety state arising when individuals believe they are unaware of or excluded from rewarding events shared by others on social media (12). Qualitative descriptions emphasize the emotional response of seeing others' posts without one's own presence represented, which elicits negative affect (13). Synthesizing these definitions, FOMO can be framed as a social-cognitive anxiety marked by hypervigilance to others' experiences and a perceived deficit in one's own participation, often expressed through compulsive platform checking and heightened dependence on smartphones.

Antecedents and maintaining factors: Proposed drivers include unmet needs for satisfaction and belonging, obsessive control tendencies, competitive orientation, and low mood (14). In practice, these dispositions are enacted in digital microbehaviors, continuous monitoring of updates, rapid rechecking after disconnection, and anxiety relief upon reconnection (15)(14). Because smartphones render social feeds omnipresent, the incidence and expression of FOMO have increased in tandem with mobile adoption; this overlap with problematic technology use is repeatedly noted (8).

Consequences: FOMO is associated with adverse affect (lower mood, dissatisfaction), reduced self-esteem, boredom/loneliness, sleep disturbance, and elevated stress (8). Behaviorally, it is

associated with decreased sustained attention, erosion of face-to-face engagement, delayed responsibilities (e.g., academic tasks), and irregular sleep patterns (8). These downstream effects are consistent with a cycle in which anxiety about missing out promotes frequent checking, which in turn undermines wellbeing and task performance.

Social comparison is a core mechanism. Social comparison theory posits an inherent drive to evaluate the self in relation to others (16). Two dominant directions are described: upward comparison (to better-off others) and downward comparison (to worse-off others) (16). Social media algorithms amplify upward comparison by curating achievement- and appearance-laden content, thereby increasing opportunities for unfavorable contrasts and negative affect. Evidence shows even brief exposure to "healthy/successful" profiles can depress self-evaluations (17). Adolescents and young adults appear particularly susceptible, with patterns that include lower wellbeing among girls and links to depression, anxiety, body image concerns, disordered eating, and exposure to unrealistic standards and cyberbullying. Practical mitigation, therefore, includes limiting exposure, avoiding triggering content, remembering the unreality of curated posts, practicing gratitude, time-limited usage, and following prosocial accounts (24).

Synthesis: In sum, FOMO and social comparison are tightly coupled processes in digitally saturated environments: needs for belonging and status, plus constant access to others' highlights, create conditions for anxiety, repetitive checking, and impaired wellbeing (12)(14)(16)(17)(24). This framework provides a foundation for examining mental health and academic correlates in student populations.

2.2 Specific Literature Review

Overview: A growing body of research in health profession learners and university samples links social media use, FOMO, comparison processes, and key outcomes, including sleep, affect, and academic functioning (18)(9)(19)(10)(20)(21)(22)(23). Below, we summarize pivotal studies, paying particular attention to their mechanisms and implications.

2.2.1 Social media, FOMO, and negative affect in Chinese medical students (18)

In a cross-sectional sample of medical students, social media use was positively related to FOMO and negative emotions. While the direct path from social media to negative emotions was not

significant, FOMO mediated this association, and resilience moderated the FOMO-negative emotion pathway, dampening the effect among students with higher resilience. These findings position FOMO as a psychological conduit linking platform use to affective distress, and resilience as a protective factor (18).

2.2.2 FOMO and sleep quality in Brazilian medical students (9)

Among medical students, FOMO scores averaged 22.08 ± 6.71 alongside poor sleep (PSQI 7.26 ± 3.08) and elevated smartphone use (SASSV 30.21 ± 10.20). Moderate/severe anxiety and depression were reported by 35.2% and 16.9%, respectively. Positive correlations connected FOMO with sleep disturbance and smartphone metrics, underscoring an intertwined cluster of risks with implications for mental health and academic performance (9).

2.2.3 FOMO, wellbeing, academic performance, and social media in university students (19)

Survey data indicated that higher FOMO related to greater social media use, with nuanced patterns: FOMO showed a positive association with life satisfaction and complex interactions with academic performance. Notably, social media use moderated the FOMO grades relationship, such that heavier use appeared to offset performance decrements observed at lower use levels. Life satisfaction further moderated the relationship between FOMO use and the link (19). These results highlight that FOMO's impact is not unidirectionally harmful and may be context-dependent.

2.2.4 Social networking intensity and FOMO in Sudanese medical students (10)

In a Khartoum cohort, social networking intensity (SNI) and FOMO exhibited a moderate positive correlation ($r = 0.53$, $p < 0.001$). Approximately 23.6% of students had moderate SNI/FOMO, and 4.8% had high SNI/FOMO, with minimal sociodemographic differences, except for a positive correlation between SNI and monthly income. This study corroborates the association between intensive use and elevated FOMO in a regional medical school context (10).

2.2.5 Social comparison during clinical rotations (20)

Experimental evidence from clinical training scenarios showed that students' performance expectations varied systematically with comparison targets: confidence increased after downward comparison and decreased after upward comparison. This aligns with classic theory

and suggests that clinical learning environments may potentiate comparison-driven fluctuations in self-efficacy (20).

2.2.6 Self-comparison and self-esteem among healthcare students (21)

A quantitative survey of healthcare students revealed frequent self-comparison, which was tied to motivation, self-esteem, and emotional reactivity. Moderate positive correlations were found between comparison frequency and grade comparison, as well as with impacts on self-esteem and questioning skills, alongside associations with jealousy/annoyance. While many students perceived upward comparison as spurring improvement and goal-setting, a sizable proportion reported anxiety, underscoring a **dual-edged** role of comparison. Suggested supports include resilience-building, self-compassion, robust social support, and gender-sensitive interventions (21).

2.2.7 Academic stress, upward comparison, and depression in nursing students (22)

During COVID-19, academic stress and upward social comparison, along with age ≥25, predicted higher depression scores in nursing students. Correlations linked depression with both academic stress and social comparison, and regression models explained a meaningful share of variance. The study advocates for curricular mental health programs that target stress management and comparison tendencies, particularly for older students and late program cohorts (22).

2.2.8 Social networking, comparison, and psychological wellbeing in medical university students (23)

In an Indian medical university sample, social comparison correlated positively with depression and anxiety across genders. Among females, fewer Instagram followers were associated with higher anxiety/depression; frequent photofilter use was related to higher comparison, depression, and anxiety in both sexes. The findings reinforce social comparison as a mediator of SNS effects on wellbeing and point to modifiable digital behaviors (e.g., platform features, follower dynamics) as potential intervention levers (23).

Summary and implications: Across settings and methodologies, the literature converges on three themes:

1. **Mechanistic coupling**: FOMO and social comparison jointly translate social media exposure into affective and behavioral outcomes, with resilience moderating risks (18)(16)(24).
2. **Multidimensional impacts**: associations span sleep/wellbeing (9), anxiety/depression (22)(23), and academic functioning/performance expectations (19)(20)(21).
3. **Contextual nuance**: effects vary by learner stage, gendered experiences online, usage intensity, and platform features (10)(19)(23). These insights motivate targeted inquiry among medical students and justify examining **mental health, academic achievement, social comparison, gender differences, and coping strategies**, the domains specified in the present study's objectives.

3. METHODOLOGY

This study employed a quantitative, descriptive, cross-sectional institutional design. It was conducted at the University of Bahri, College of Medicine, located in Khartoum on Ahmed Khair Street, west of Al-Qurashi Garden and east of Sudan Medical Supplies. The College of Medicine, established in July 2011 as a continuation of the former Southern Sudan universities (University of Juba, Upper Nile University, and Bahr El-Ghazal University), adopts an integrated systems approach encompassing basic sciences, clinical sciences, and professional competencies. The study period extended from August to September 2025.

The study population consisted of all undergraduate clinical medical students enrolled in the 4th, fifth, and sixth years at the University of Bahri during the specified period. The inclusion criteria were students from these years who were currently enrolled, willing to participate, and provided informed consent. They were able to complete the questionnaires related to Fear of Missing Out (FOMO) and social comparison. Exclusion criteria comprised preclinical students (1st–3rd years), students unavailable during data collection, incomplete or partially filled questionnaires missing major sections, non-medical students, and those who declined participation or did not provide consent.

The sampling frame consisted of a well-defined roster of all 4th–6th year medical students

registered for the 2025 academic cycle. The minimum required sample size was determined using Yamane's formula ($n = N / [1 + N e^2]$), where N represents the population size and e the margin of error. With a total population of 665 students (220 from the 4th year, 245 from the 5th year, and 200 from the 6th year) and a margin of error of 0.05, the calculation yielded a required sample size of approximately 250 participants. Proportional allocation was then applied across academic years, resulting in 82 students from the 4th year (33%), 89 from the 5th year (36%), and 74 from the 6th year (30%). The final sample achieved in the results (N = 249) met or slightly exceeded the calculated target.

A convenience sampling technique was employed based on academic year (4th, 5th, and sixth), followed by convenience scheduling within each stratum to enhance participation. This approach utilized class timetables and online access to maintain proportional allocation. Data were collected using a secure Google Forms survey distributed via email and class communication channels. The invitation message contained detailed study information, confidentiality assurances, and a consent statement. Participants could complete the survey on any internet-enabled device at their convenience. The questionnaire included sections on demographic and study-related variables (age, academic year, residence, and screen time), FOMO items, social comparison items, and coping strategies, which were categorized into cognitive, emotional, behavioral, and avoidant/maladaptive domains. Logic controls were embedded to minimize missing data, and incomplete responses with significant omissions were excluded according to protocol.

Data were exported to SPSS version 26 for analysis. The data management process included range checks, type validation, and listwise deletion of incomplete records. Descriptive statistics were used to summarize the data, with frequencies and percentages reported for categorical variables, and means with standard deviations or medians with interquartile ranges reported for continuous or ordinal scale variables. Scale reliability was evaluated using Cronbach's alpha for the FOMO, social comparison, and coping subscales, with item-total inspection to ensure internal coherence. Group comparisons were conducted using the Mann–Whitney U test to assess median differences by gender after distribution diagnostics. Correlation analyses were performed using Spearman's rho to explore the associations between key continuous and ordinal variables, including FOMO, social comparison, and coping domains. A significance level of $\alpha = 0.05$ (two-tailed) was adopted for all inferential tests. Results were summarized and presented in tables and figures as reported in the Results section.

Ethical approval for the study was obtained from the Department of Community Medicine, University of Bahri, along with authorization from the research supervisor. Participation was

entirely voluntary, and all participants were informed of the study objectives prior to providing verbal consent. No identifying information was collected, ensuring anonymity and confidentiality. Data were stored in password-protected files accessible only to the research team, and all findings are presented in aggregate form. All information sources were properly cited and referenced to ensure academic integrity.

5.1 Discussion

This study investigated Fear of Missing Out (FOMO) among clinical medical students at the University of Bahri, its association with social comparison, gender differences, and coping strategies. Overall, the cohort exhibited **moderate FOMO**, consistent with international findings in university and medical student samples that link intensive social media engagement with FOMO-related affective burden (2, 9, 10). The present data extend prior work by quantifying domain-specific coping and delineating patterns of social comparison within a Sudanese medical school context.

Level of FOMO

Participants' total scores indicated **moderate FOMO**, aligning with prior university cohorts and medical students (9,10). These convergences are plausible given shared academic demands, performance benchmarking, and constant digital connectivity typical of contemporary medical education (2). Mechanistically, repetitive checking and anticipatory anxiety, hallmarks of FOMO, likely increase cognitive load and stress during already intensive study periods (2).

FOMO and academic/psychological correlates

Although the present cross-sectional design precludes causal inference, the pattern of associations is consistent with the literature linking FOMO to lower sleep quality, elevated anxiety/depressive symptoms, and problematic smartphone use (9). Theoretical accounts suggest that FOMO exacerbates negative affect through upward social comparison and attentional capture by reward-predictive cues on social media platforms (2). In academically demanding settings, these processes can erode sustained attention and study routines, leading to increased procrastination and stress.

FOMO and social comparison

Students reported nontrivial social comparison tendencies, with many acknowledging that comparison informs self-understanding, while a sizeable minority rejected frequent accomplishment-based comparisons (Tables 5–6). This profile aligns with Social Comparison Theory, which posits that individuals evaluate their abilities and opinions in comparison to others

(25). As platforms preferentially surface peers' successes and curated highlights, opportunities for upward comparison become frequent, which can either motivate or undermine wellbeing, depending on the context and perceived attainability (16, 17, 23). Our findings align with reports from clinical training and university samples, which show that comparison processes influence confidence, mood, and expectations (20,23). Related evidence from nursing students during COVID-19 further links upward comparison and academic stress to depressive symptoms (26), emphasizing the psychological salience of comparison in health professional education.

Gender differences

No significant gender difference emerged for FOMO totals, consistent with prior work suggesting FOMO reflects broadly shared psychological needs in highly connected environments rather than simple demographic effects (2,10). However, men showed higher social comparison scores, whereas women reported higher cognitive and emotional coping and greater endorsement of some maladaptive behaviors. Cultural and gendered norms in evaluative contexts may partially explain these patterns (6, 28, 23). The cooccurrence of stronger emotion-focused coping in women with signs of maladaptive responses (e.g., contingent self-worth online) echoes reports of more frequent upward comparisons and self-evaluative anxiety among female students in academic and social domains (23,29).

Coping strategies

Cognitive coping predominated, as most students actively reappraised social media content (e.g., “people post only highlights”) and emphasized goal focus over comparison-based adaptive strategies, consistent with recommended psychoeducation and media literacy approaches. By contrast, behavioral coping strategies (e.g., limiting screen time, unfollowing triggers, scheduling checks, and offline substitution) were modestly endorsed, while emotional help-seeking was underutilized. A notable minority endorsed maladaptive patterns (compulsive checking despite anxiety; validation via likes), underscoring a gap between insight and behavior change. These findings suggest that interventions should pair cognitive reframing with behavioral skills training (such as time management, stimulus control, and digital hygiene) and emotion regulation/support pathways, rather than relying solely on awareness (23,30).

Integrative interpretation

Taken together, the results support a model in which platform exposure → social comparison → FOMO/anxiety loops are sustained by cognitive biases and suboptimal coping, with gender-

patterned expressions but no gender difference in FOMO totals (2, 10, 23, 25, 26, 29). Targeted, skills-based interventions are likely to yield the most significant benefits when they simultaneously (i) reduce upward comparison exposure, (ii) enhance controllability of usage, and (iii) strengthen resilience and peer support.

5.2 Limitations

1. **Time window and participation:** A short study period and variable access (including conflict-affected areas) may have constrained participation and representativeness.
2. **Literature depth:** Limited local studies complicated the full contextualization of some findings.
3. **Self-report bias:** Self-administered questionnaires are vulnerable to recall and social desirability biases.
4. **Single-site design:** Findings from a single university may not be generalizable across institutions or cultures.
5. **Unmeasured confounding:** Personality traits, prior mental health history, and objective academic metrics were not controlled, and these factors may influence the associations.

5.3 Recommendations

1. **Institutional recognition and monitoring:** Integrate periodic screenings for FOMO/social comparison stress within student wellbeing services, mapping links to sleep, attention, and academic functioning.
2. **Psychoeducation and confidence-building:** Deliver workshops on media literacy, upward comparison reframing, emotion regulation, and values-aligned goal setting, emphasizing responsible platform use and reducing addiction risk.

3. **Skills-based digital hygiene:** Teach practical behaviors, time caps, notification control, scheduled checks, unfollow/mute triggers, and offline substitution to convert insight into sustained behavior change.
4. **Broader research scope:** Conduct multisite, longitudinal studies with objective academic outcomes, and test targeted interventions (e.g., app-based prompts, peer-support models) to determine causal effects and generalizability.

5.4 Conclusion

Clinical medical students demonstrated moderate FOMO in response to a meaningful social comparison activity. These processes co-occur with markers of psychological strain and study-relevant behaviors, while gender differences appear in *how* students cope rather than in FOMO magnitude. The pattern aligns with contemporary models of digital engagement, comparison, and affect in student populations (2, 10, 23, 25, 26, 29). Moving beyond awareness, structured, skills-based interventions that couple cognitive reframing with behavioral and emotional strategies are warranted to protect mental health and preserve academic performance in highly connected training environments.

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Author Contributions :

(Z.I.T.M) *(First Author)* – He conceptualized and designed the study, supervised the research process, and guided the formulation of the objectives and methodology. He was responsible for ensuring scientific rigor, verifying the accuracy of collected data, and critically reviewing all manuscript drafts to ensure academic quality and integrity.
(E.A.M.T) *(Second Author)* – She contributed to the literature review, assisted in developing the data collection tools, and participated in data entry and validation. She drafted several sections of the manuscript and ensured that references were cited according to journal standards.
(E.A.A.A) *(Third Author)* – She performed data organization, preliminary statistical analysis, and contributed to result interpretation. She supported the revision of figures and tables, ensured consistency in formatting, and provided technical support in preparing the final draft.
(A.F.A.O) *(Corresponding Author)* – She served as the corresponding author, coordinated communication among coauthors, and ensured adherence to journal submission requirements. She finalized the manuscript structure, integrated all author inputs, approved the final version for submission, and guaranteed that all authors met authorship criteria.

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Conflict of Interest
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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