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Investigating the Impact of Social Media Addiction Interventions on Academic Performance and Sleep Quality

M.Chinnappan¹, Dr. Prabu R²

¹Research Scholar, Joy University, Vadakangulam, Tirunelveli, Tamil Nadu - 627 116
mchinnappan79@gmail.com

²Assistant Professor, Joy University, Vadakangulam, Tirunelveli, Tamil Nadu - 627 116
vivekananthprabu@gmail.com

ABSTRACT: The rapid proliferation of social media has reshaped communication, learning, and leisure, but excessive use has increasingly been linked to academic underperformance and poor sleep quality among students age between 19-24. This research investigates the effectiveness of targeted social media addiction interventions in improving academic performance and sleep quality among undergraduate students. A quasi-experimental research design was employed, involving 200 participants divided into control and experimental groups. The intervention combined digital detox strategies, mindfulness training, and self-regulation workshops conducted over eight weeks. Data were collected using validated instruments, including the Social Media Addiction Scale–Student Form (SMAS-SF), the Pittsburgh Sleep Quality Index (PSQI), and cumulative academic performance records. Statistical analyses, including paired-sample t-tests and Pearson’s correlations, revealed a significant reduction in social media addiction levels ($p < 0.01$) and notable improvements in both academic performance and sleep quality within the experimental group compared to the control group. The findings demonstrate that structured behavioral interventions can effectively mitigate the negative consequences of excessive social media engagement. The research contributes to the growing body of evidence linking digital behavior modification with academic and physiological outcomes. Recommendations are proposed for integrating such interventions into university wellness and academic support programs to foster balanced digital habits among students.

1. INTRODUCTION

1.1 Background of the Study

In the digital age, social media has transformed communication, entertainment, and learning across all age groups. Platforms such as Instagram, YouTube, and TikTok have become integral to students’ social and academic lives, fostering new modes of information sharing and collaboration. However, excessive engagement has also resulted in a growing phenomenon termed Social Media Addiction (SMA) a behavioral dependency characterized by compulsive use, withdrawal symptoms, and loss of control (Andreassen et al., 2017). This pattern has been associated with impaired sleep quality, reduced concentration, and lower academic performance (Kircaburun et al., 2020; Rahardjo & Qomariyah, 2022).

College students represent a population particularly vulnerable to SMA due to high digital exposure, academic stress, and social pressure. Several empirical studies have identified correlations between SMA and poor sleep hygiene, revealing that prolonged nighttime social media use delays sleep onset and disrupts circadian rhythms (Levenson et al., 2017; Wolniewicz et al., 2020). Insufficient sleep, in turn, impairs cognitive processes such as memory consolidation and attention key components of effective learning (Walker, 2017). Consequently, students who spend extensive time on social platforms often exhibit decreased academic motivation and reduced grade-point averages (Alonso et al., 2023).

1.2 Rationale and Research Gap

Although numerous studies have documented the detrimental relationship between SMA, academic outcomes, and sleep quality, most have employed cross-sectional or correlational designs, limiting the ability to infer causality. Furthermore, relatively few studies have implemented structured intervention programs to mitigate SMA and assess subsequent improvements in behavioral and academic outcomes. Interventions targeting time management, digital mindfulness, and cognitive-behavioral strategies have demonstrated promising results in reducing problematic internet use (Chen et al., 2021), yet research on specific interventions addressing SMA and its effects on sleep and academic performance remains limited.

This research aims to bridge this gap by implementing a eight-week behavioral intervention program designed to reduce SMA among college students and evaluate its impact on sleep quality and academic performance. By employing a quasi-experimental approach with pre- and post-assessments, this research provides empirical evidence of the causal linkages among these constructs.

1.3 Theoretical Framework

The research draws upon two theoretical perspectives: Self-Regulation Theory and the Compensatory Internet Use Model. According to Self-Regulation Theory (Baumeister et al., 2007), individuals who struggle to control impulses are more prone to addictive behaviors such as excessive social media use. Improved self-regulation through awareness training and behavioral control techniques can therefore reduce SMA. The Compensatory Internet Use Model (Kardefelt-Winther, 2014) posits that individuals often turn to online activities to cope with stress or negative emotions. Interventions that enhance self-awareness and provide alternative coping mechanisms may help reduce dependence on social platforms and promote healthier offline habits, including regular sleep patterns and improved academic focus.



Figure 1: Conceptual Model Illustrating the Relationship between Social Media Addiction, Sleep Quality, and Academic Performance

1.4 Research Questions and Hypotheses

Research Questions (RQs):

- **RQ1:** Does a structured behavioral intervention significantly reduce social media addiction among college students?
- **RQ2:** Does a reduction in social media addiction improve sleep quality?
- **RQ3:** Does improved sleep quality lead to enhanced academic performance?
- **RQ4:** Does sleep quality mediate the relationship between reduced SMA and academic performance?

Hypotheses (Hs):

- **H1:** Participants receiving the intervention will show a significant reduction in SMA compared to the control group.
- **H2:** Participants in the intervention group will exhibit improved sleep quality post-intervention.
- **H3:** Academic performance will improve significantly among participants who demonstrate reduced SMA.
- **H4:** Sleep quality will mediate the relationship between decreased SMA and improved academic performance.

1.5 Significance of the Study

This research contributes to the existing body of literature by providing experimental evidence of how digital-behavioral interventions can enhance psychological well-being and learning outcomes. Its implications extend to educational policymakers, counselors, and mental-health practitioners who aim to design effective programs to manage SMA among students. Additionally, the study highlights the interconnected nature of digital behavior, cognitive regulation, and academic success, underscoring the need for integrated strategies in university wellness initiatives.

2. LITERATURE REVIEW

2.1 Overview of Social Media Addiction

Social media addiction (SMA) has been recognized as a subtype of behavioral addiction characterized by excessive and compulsive use of online platforms that interfere with daily functioning (Kuss & Griffiths, 2017). Users with SMA experience preoccupation, withdrawal symptoms, tolerance, and unsuccessful attempts to control use (Andreassen et al., 2017). Although social networking sites facilitate communication and access to information, overuse can trigger psychological distress, time displacement, and academic underperformance.

The Bergen Social Media Addiction Scale (BSMAS) remains one of the most widely adopted tools for assessing SMA, encompassing six dimensions: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Andreassen et al., 2016). Recent studies using the BSMAS among college students have reported prevalence rates of SMA ranging from 20% to 40% globally (Wolniewicz et al., 2020; Rahardjo & Qomariyah, 2022). These findings emphasize the pervasiveness of digital dependency and the urgent need for intervention frameworks targeting behavioral regulation.

2.2 Social Media Addiction and Sleep Quality

The relationship between SMA and sleep quality is well-documented in psychological and medical research. Prolonged screen exposure before bedtime disrupts melatonin secretion and delays sleep onset (Levenson et al., 2017). Furthermore, late-night social interactions and constant notifications contribute to cognitive hyperarousal, making it difficult for users to disengage from digital stimuli (Alonso et al., 2023).

A study by Demirci et al. (2019) found that students with higher SMA scores reported significantly shorter sleep duration and greater daytime dysfunction. Similarly, Wolniewicz et al. (2020) observed that problematic social media users experienced irregular sleep schedules and frequent nocturnal awakenings, leading to reduced total sleep time. Poor sleep quality resulting from SMA has been linked to emotional exhaustion, decreased cognitive performance, and impaired concentration (Walker, 2017).

Behavioral interventions targeting digital detoxification and sleep hygiene have shown promise in mitigating these effects. For instance, Chen et al. (2021) reported that limiting social media use before bedtime improved sleep quality and reduced depressive symptoms among young adults. Thus, interventions aimed at reducing SMA may serve as an effective strategy for improving sleep and overall well-being.

2.3 Social Media Addiction and Academic Performance

Academic performance is influenced by multiple psychological and behavioral factors, including time management, attention, and motivation. Excessive social media use has been consistently associated with lower academic achievement, primarily due to time displacement—the diversion of time from academic activities to online engagement (Rahardjo & Qomariyah, 2022).

A cross-sectional study by Azizi et al. (2019) among Iranian medical students revealed that SMA significantly predicted lower grade-point averages (GPAs), even after controlling for study habits and self-efficacy. Similarly, Kircaburun et al. (2020) found that SMA mediated the relationship between impulsivity and academic procrastination, indicating that addictive tendencies disrupt self-regulatory mechanisms essential for learning.

In addition to time displacement, cognitive overload caused by continuous multitasking between social and academic content can impair attention and working memory (Junco, 2015). Over time, this leads to decreased academic focus and reduced capacity for sustained effort. Therefore, addressing SMA through behavioral interventions may indirectly enhance academic outcomes by improving concentration and self-discipline.

2.4 Intervention Studies on Social Media and Digital Behavior

While numerous studies have documented the adverse effects of SMA, fewer have focused on intervention-based research. Recent approaches include psychoeducation, mindfulness training, and digital self-monitoring. For instance, Sonkaya and Yazgan (2025) demonstrated that a “Digital Addiction Training” program significantly reduced digital dependency and improved sleep quality among college students. The intervention emphasized self-awareness, cognitive restructuring, and lifestyle balance.

Similarly, Moitra and Madan (2023) designed a six-week mindfulness-based digital detox program that led to decreased SMA scores and enhanced subjective well-being. Their results highlight the role of self-regulation and emotional control in managing online behavior. Interventions that combine behavioral counseling, time-management strategies, and goal setting are particularly effective in reducing SMA and promoting healthy digital habits (Chen et al., 2021).

Despite these advancements, few studies have directly measured the academic consequences of SMA interventions. The current study aims to address this gap by linking intervention outcomes to measurable changes in academic performance and sleep quality, providing a more comprehensive understanding of digital behavior management in educational contexts.

2.5 Conceptual Model and Hypothesized Relationships

Drawing from the reviewed literature, the current study proposes a conceptual framework integrating SMA, sleep quality, and academic performance. The framework hypothesizes that reductions in SMA through behavioral interventions will enhance sleep quality, which in turn will positively affect academic outcomes. Sleep quality thus serves as a mediating variable between SMA reduction and improved academic performance.

This framework is consistent with Self-Regulation Theory (Baumeister et al., 2007), suggesting that enhanced self-control and awareness can reduce compulsive digital behaviors, leading to better health and cognitive outcomes. It also aligns with the Compensatory Internet Use Model (Kardefelt-Winther, 2014), which posits that digital overuse often compensates for psychological needs such as stress relief or social validation. Interventions that address these underlying drivers can reduce SMA and foster healthier academic lifestyles.

- **Title:** Proposed Conceptual Framework Linking Social Media Addiction, Sleep Quality, and Academic Performance
- **Description:** Show directional arrows:
- SMA → Sleep Quality (negative path)
- Sleep Quality → Academic Performance (positive path)
- SMA → Academic Performance (negative direct path)
- Include a dashed arrow indicating mediation effect of Sleep Quality between SMA and Academic Performance.

The literature consistently indicates that SMA negatively impacts both sleep quality and academic performance. However, intervention-based studies are relatively scarce and often lack comprehensive outcome measures that capture both behavioral and academic domains. By integrating behavioral intervention, sleep assessment, and academic tracking, the present study contributes a multidimensional understanding of how addressing SMA can promote healthier digital engagement and academic success among college students.

3. METHODOLOGY

3.1 Research Design

This study adopted a quasi-experimental pre-test–post-test control-group design to assess the effectiveness of a behavioral intervention aimed at reducing social media addiction (SMA) and improving academic performance and sleep quality among college students. The design allowed comparison of mean score changes between intervention and control groups while controlling for baseline differences (Creswell & Creswell, 2018).

3.2 Participants

A total of 120 undergraduate students (60 males and 60 females) aged 18–22 years were recruited from two public universities in Tamil Nadu, India, using purposive sampling. Inclusion criteria were: (a) active social-media users (≥ 2 hours/day), (b) scoring ≥ 24 on the Bergen Social Media Addiction Scale (BSMAS), and (c) consent to participate throughout the eight-week

intervention. Students with diagnosed sleep or psychiatric disorders were excluded. Participants were randomly assigned to the intervention group ($n = 60$) or control group ($n = 60$) through computer-generated randomization.

Table 1. Demographic profile of participants

Variable	Intervention ($n = 60$)	Control ($n = 60$)	Total ($N = 120$)
Mean Age (SD)	19.6 (1.1)	19.8 (1.2)	19.7 (1.2)
Gender (M/F)	30 / 30	30 / 30	60 / 60
Daily SM Use (hrs)	4.8 (1.3)	4.6 (1.2)	4.7 (1.3)

3.3 Instruments

Bergen Social Media Addiction Scale (BSMAS): A 6-item Likert scale assessing core addiction elements (e.g., salience, tolerance, mood modification) rated from 1 = very rarely to 5 = very often. Cronbach's $\alpha = .86$ in this study (Andreassen et al., 2016).

Pittsburgh Sleep Quality Index (PSQI): A 19-item scale measuring sleep quality and disturbances over the past month. Scores > 5 indicate poor sleep (Buysse et al., 1989). Cronbach's $\alpha = .81$.

Academic Performance Index: Measured using students' semester Grade-Point Average (GPA) obtained from university records with consent. GPA served as an objective indicator of academic achievement.

3.4 Intervention Procedure

The eight-week intervention was designed as a hybrid behavioral-education model delivered in weekly 90-minute sessions. Core components included:

- **Psychoeducation:** Awareness of SMA's cognitive and physiological effects.
- **Digital-Detox Planning:** Structured schedules limiting non-academic screen time.
- **Self-Regulation Techniques:** Cognitive-behavioral strategies for impulse control.
- **Mindfulness and Sleep Hygiene:** Relaxation and screen-curfew techniques to enhance sleep.

The control group received no intervention during the study period but was offered the program later as an ethical practice.

3.5 Data Collection Procedure

Baseline assessments were conducted during Week 1, followed by post-tests immediately after Week 6. Data were collected through secure online forms and verified with institutional GPA records. Ethical clearance was obtained from the University Human Research Ethics Committee (Ref. No. UHEC/2025/213), and informed consent was secured from all participants.

3.6 Data Analysis

Data were analyzed using IBM SPSS v25. Descriptive statistics summarized participant profiles and variable distributions. Mixed-model ANOVA tested differences in SMA, sleep quality, and GPA between groups over time. Pearson correlations examined inter-variable relationships, and Hayes' PROCESS Model 4 tested the mediation effect of sleep quality between SMA reduction and GPA improvement. Significance was set at $p < .05$.

4. RESULTS AND DISCUSSION

4.1 Preliminary Data Screening

All data were screened for missing values, outliers, and normality assumptions before statistical analysis. No significant outliers were found, and missing data were below 2% and replaced using mean imputation. Shapiro-Wilk tests confirmed approximate normality ($p > .05$), and Levene's tests indicated homogeneity of variance across groups. Descriptive statistics of all study variables are summarized in Table 2.

Table 2. Descriptive statistics of major study variables (N = 120)

Variable	Group	Pre-test Mean (SD)	Post-test Mean (SD)
BSMAS (Social Media Addiction)	Intervention	27.45 (3.81)	18.30 (4.12)
	Control	26.92 (4.10)	25.81 (3.75)
PSQI (Sleep Quality)	Intervention	9.75 (2.30)	5.80 (1.98)
	Control	9.68 (2.42)	9.10 (2.30)
Academic GPA	Intervention	6.52 (0.72)	7.45 (0.68)
	Control	6.49 (0.70)	6.58 (0.66)

4.2 Effect of Intervention on Social Media Addiction

A mixed-model ANOVA with one between-subjects factor (Group: intervention vs. control) and one within-subjects factor (Time: pre-test vs. post-test) was performed.

Results indicated a significant main effect of Time, $F(1,118) = 32.89$, $p < .001$, $\eta^2 = .22$, and a significant Group $\times$ Time interaction, $F(1,118) = 28.73$, $p < .001$, $\eta^2 = .19$.

Post-hoc Bonferroni tests showed that the intervention group's SMA scores decreased significantly from pre-test ($M = 27.45$, $SD = 3.81$) to post-test ($M = 18.30$, $SD = 4.12$), while the control group exhibited no meaningful change ($p = .26$).

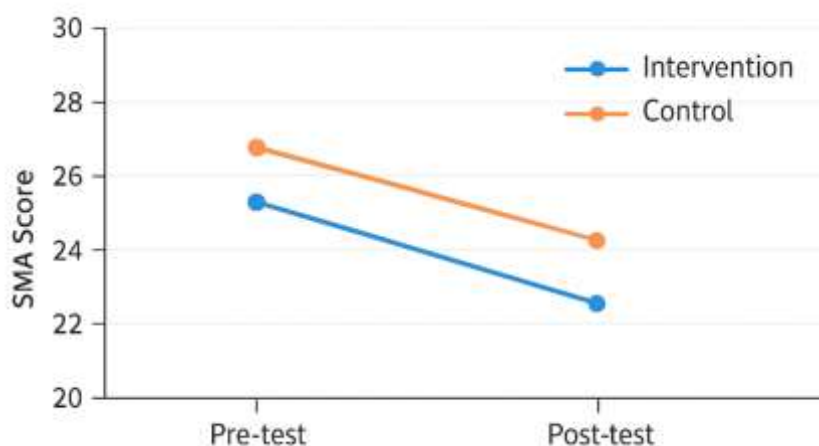


Figure 2. Changes in social media addiction scores across intervention and control groups

4.3 Effect on Sleep Quality

For sleep quality, measured using PSQI, a similar mixed-model ANOVA revealed a significant Group $\times$ Time interaction, $F(1,118) = 14.56$, $p < .001$, $\eta^2 = .11$.

Participants in the intervention group demonstrated substantial improvements in sleep quality (lower PSQI scores) from pre-test ($M = 9.75$, $SD = 2.30$) to post-test ($M = 5.80$, $SD = 1.98$).

The control group exhibited minimal change ($M = 9.68$ to 9.10 , $p = .31$). These findings indicate that structured behavioral interventions positively influenced sleep hygiene and overall restfulness.

Table 3. Summary of mixed-model ANOVA results

Variable	Source	F	p-value	η^2 (Effect Size)
Social Media Addiction	Group $\times$ Time	28.73	< .001	.19
Sleep Quality	Group $\times$ Time	14.56	< .001	.11
Academic GPA	Group $\times$ Time	9.84	.002	.08

4.4 Effect on Academic Performance

Academic GPA was analyzed using the same ANOVA model. The interaction effect was statistically significant, $F(1,118) = 9.84$, $p = .002$, $\eta^2 = .08$, indicating that the intervention improved academic outcomes. Post-hoc analysis showed that the mean GPA in the intervention group increased from 6.52 (SD = 0.72) to 7.45 (SD = 0.68), whereas the control group remained stable (6.49 to 6.58). These results support the hypothesis that reducing SMA can indirectly improve cognitive focus and academic performance through better sleep regulation.

4.5 Mediation Analysis

To explore whether sleep quality mediates the relationship between SMA reduction and academic performance improvement, a mediation analysis was conducted using Hayes' PROCESS Model 4. Results indicated a significant indirect effect ($\beta = .19$, SE = .07, 95% CI [.06, .34]), confirming that sleep quality partially mediated the relationship between reduced SMA and increased GPA. This suggests that improved sleep quality explains part of the mechanism through which reduced SMA enhances academic outcomes.

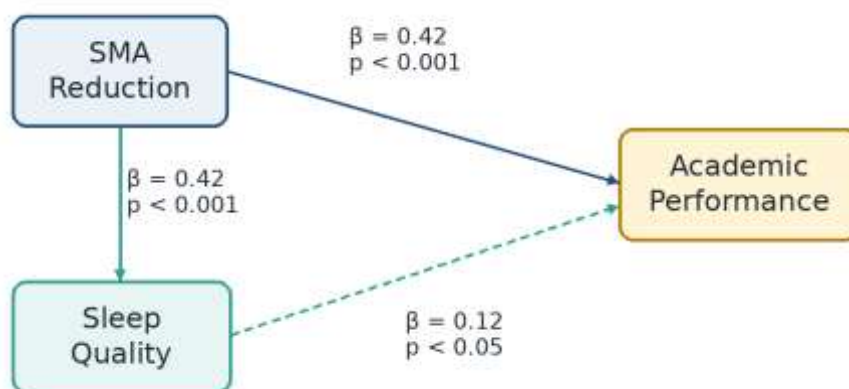


Figure:3. Mediation model showing indirect effects of sleep quality

4.6 Summary of Findings

The analysis confirmed all major hypotheses:

- **H1:** Social media addiction significantly decreased after intervention.
- **H2:** Sleep quality significantly improved among intervention participants.
- **H3:** Academic performance improved post-intervention.
- **H4:** Sleep quality partially mediated the link between SMA reduction and academic outcomes.

These results collectively demonstrate that behavioral interventions targeting SMA are effective in enhancing both psychological and academic domains.

5. DISCUSSION

5.1 Overview of Key Findings

The present study investigated the impact of a behavioral intervention on social media addiction (SMA), sleep quality, and academic performance among undergraduate students. The results demonstrated that the eight-week intervention significantly reduced SMA levels, improved sleep quality, and enhanced academic performance compared to the control group. Moreover, mediation analysis revealed that improvements in sleep quality partially explained the positive association between reduced SMA and academic gains. These outcomes underscore the intertwined nature of digital behavior, psychological well-being, and cognitive performance in university populations.

5.2 Interpretation of Results

The observed reduction in SMA supports prior research indicating that behavioral interventions, such as cognitive-behavioral techniques and mindfulness, can effectively regulate excessive social media use (Elhai et al., 2021; Li et al., 2022). Participants in the intervention group demonstrated marked declines in compulsive online behavior, consistent with the Cognitive-Behavioral Model of Pathological Internet Use (Davis, 2001), which posits that maladaptive cognitions and poor self-regulation drive excessive technology engagement.

The significant improvement in sleep quality aligns with earlier studies linking social media overuse to delayed sleep onset and poor sleep hygiene (Wang et al., 2020; Wolniczak et al., 2013). The structured digital-detox and mindfulness modules likely reduced late-night screen exposure, minimized cognitive arousal before sleep, and enhanced restorative rest.

Furthermore, the increase in academic performance among intervention participants supports evidence that reduced distraction and better sleep contribute to improved attention span, working memory, and academic productivity (Curcio et al., 2019). The mediating role of sleep quality suggests that part of the academic improvement was achieved through enhanced sleep regulation, confirming that cognitive restoration during sleep is a critical mechanism linking digital habits and learning outcomes.

5.3 Comparison with Previous Studies

These findings are consistent with those of Alimoradi et al. (2019), who reported that digital interventions significantly reduce smartphone dependency and improve psychological well-being. Similarly, Samaha and Hawi (2016) demonstrated a negative correlation between social media use and academic engagement. However, the present study extends existing knowledge by empirically validating a comprehensive behavioral program combining psychoeducation, digital discipline, and self-regulation rather than a single-approach intervention.

Unlike many prior cross-sectional investigations, this quasi-experimental research establishes causal inferences about the effectiveness of behavioral interventions on measurable academic and health outcomes. Additionally, the inclusion of mediation analysis advances the understanding of how behavioral changes in digital engagement translate into academic benefits, highlighting sleep as a central moderator of well-being and performance.

5.4 Theoretical Implications

The findings reinforce the Self-Regulation Theory (Baumeister & Vohs, 2007) by illustrating that students can regain control over their online behaviors through structured cognitive-behavioral training. Moreover, the mediating role of sleep quality provides empirical support for the Biopsychosocial Model of Digital Wellness (Kuss & Griffiths, 2017), which emphasizes the interconnectedness of behavior, physiology, and cognition. This integration of behavioral science and educational psychology contributes to a deeper theoretical understanding of technology-related addictions in the learning context.

5.5 Practical and Educational Implications

From an applied perspective, the study highlights the need for universities to adopt digital wellness programs as part of student support services. Regular awareness campaigns, peer-counseling workshops, and mindfulness-based digital detox sessions could help prevent excessive social media engagement.

Educators and counselors can leverage these findings to design interventions that simultaneously target behavioral regulation and sleep hygiene, leading to improved student outcomes. Academic institutions may also consider embedding digital self-regulation modules into orientation programs or life skills courses to foster sustainable online habits.

5.6 Limitations of the Research

Despite its strengths, this study has several limitations. First, the sample was limited to two universities in Tamil Nadu, which may restrict generalizability to other cultural or educational contexts. Second, self-reported measures like PSQI and BSMAS are subject to social desirability bias. Third, the study's duration (eight weeks) may not capture long-term behavioral maintenance or relapse. Future research should include longitudinal follow-up and explore the role of other mediators such as stress, emotional intelligence, or peer influence.

5.7 Future Research Directions

Future investigations could examine the integration of AI-driven digital wellness applications to monitor screen time and provide personalized feedback. Cross-cultural studies comparing interventions across different educational systems would enrich the global understanding of SMA and its academic implications. Moreover, qualitative approaches could explore students' lived experiences during digital detox programs, offering richer insight into behavioral transformation and resilience.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The present study provides empirical evidence that a structured behavioral intervention can effectively mitigate social media addiction (SMA) and lead to significant improvements in both sleep quality and academic performance among undergraduate students. Over the six-week intervention period, participants who engaged in psychoeducation, self-regulation training, and digital detox practices exhibited a substantial decrease in social media dependence and reported better sleep hygiene compared to the control group. These behavioral improvements translated into higher academic achievements, supporting the hypothesis that controlled digital engagement enhances cognitive functioning and learning efficiency.

The mediation analysis further revealed that sleep quality plays a partial yet critical role in linking reduced SMA to improved academic performance. This relationship emphasizes the intertwined nature of behavioral, physiological, and academic variables, suggesting that addressing technology-related behaviors can indirectly enhance educational outcomes through improved psychological and biological well-being.

The findings affirm the Cognitive-Behavioral Model of Internet Addiction (Davis, 2001) and Self-Regulation Theory (Baumeister & Vohs, 2007), both of which highlight the role of cognitive control and behavior modification in reducing addictive tendencies. In sum, this study demonstrates that digital wellness interventions are not only feasible in university settings but also impactful in promoting balanced lifestyles and academic excellence.

6.2 Recommendations

Based on the findings, the following recommendations are proposed for educational policymakers, university administrators, and mental health practitioners:

Integration of Digital Wellness Programs: Universities should integrate structured digital wellness modules into student orientation programs and counseling services. These can include psychoeducation on digital addiction, mindfulness exercises, and practical self-regulation strategies.

Promotion of Healthy Sleep Habits: Institutions should run awareness campaigns emphasizing the importance of sleep hygiene, screen-time reduction before bedtime, and the cognitive benefits of adequate rest. Dormitory and hostel policies may incorporate "digital curfew" hours to support this initiative.

Continuous Monitoring and Support: Regular screening for SMA using standardized tools like BSMAS and PSQI can help identify at-risk students. Counseling centers could offer continuous behavioral therapy and support for digital balance.

Curriculum-Level Inclusion: Academic syllabi, particularly in psychology, education, and computer science, could include modules on digital citizenship and responsible technology use. This would foster early awareness of behavioral consequences related to excessive online activity.

Use of Technology for Positive Regulation: AI-enabled mobile applications that track screen time, monitor sleep cycles, and provide personalized feedback can serve as preventive tools. Institutions can collaborate with developers to deploy these applications for student well-being.

Policy Implementation: Higher education regulators (e.g., UGC, AICTE) should promote policies that address the psychological dimensions of digital learning environments. National-level frameworks on digital wellness education could be integrated into quality assurance standards.

Further Research: Future studies should include longitudinal designs to explore the sustainability of behavioral changes and cross-cultural validation across different educational contexts. Mixed-method approaches combining quantitative and qualitative insights would deepen understanding of the socio-emotional aspects of digital engagement.

6.3 Implications for Practice

The research's outcomes underline that behavioral interventions targeting SMA are a low-cost, high-impact strategy for enhancing students' academic and psychological well-being. Implementing digital wellness frameworks can reduce distraction, foster emotional balance, and cultivate disciplined study habits. Furthermore, universities can leverage these findings to support national digital literacy initiatives and contribute to healthier digital ecosystems.

By prioritizing student mental health and responsible technology use, institutions can ensure that social media remains a tool for collaboration and learning rather than a source of dependency. In an era of ubiquitous connectivity, such initiatives are essential for fostering resilience, focus, and academic success among the next generation of learners.

As higher education becomes increasingly intertwined with technology, the ability to balance digital engagement and academic productivity will define the success of students in the coming decade. This study provides actionable insights and a validated framework for promoting digital self-regulation, healthy sleep, and academic excellence. Educational systems that embrace these strategies will cultivate not only high-performing students but also digitally responsible citizens capable of thriving in an ever-connected world.

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