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Association of social media usage with sleep quality and burnout among dental interns

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Abstract:

Social media usage results in disrupted sleep pattern which in turn causes burnout in individuals. A descriptive study was conducted with 120 dental interns to evaluate the correlations among social media use, sleep quality and burnout. Approximately 81.7% of participants indicated utilizing social media for over 2 hours each day, whilst 77.5% engaged with social media prior to sleep. Subpar sleep quality was noted in 68.3% of interns, whereas moderate to severe burnout levels were reported by 80.0% of participants. Interns who utilized social media for over 4 hours daily had markedly elevated mean PSQI and burnout ratings relative to their counterparts with lesser usage ($p < 0.001$). Thus, data shows the detrimental effects of excessive social media use on sleep and psychological well-being among dentistry students, emphasizing the necessity for tailored interventions that encourage healthy digital practices.

Keywords: Sleep quality, social media, burnout, psychological fatigue, anxiety

Background:

The extensive accessibility of smartphones and internet connectivity has markedly enhanced the utilization of social media platforms among young adults and university students. Platforms like Instagram, WhatsApp, Facebook, X and YouTube are commonly utilized for communication, entertainment, networking and academic engagement. While social media provides several educational and social benefits, its excessive and unregulated use has become a significant public health issue due to its potential effects on mental and physical health. Recent studies indicate that extended social media usage may negatively impact sleep quality, mental well-being and academic achievement in students [1]. Sleep is a crucial physiological function vital for memory consolidation, cognitive efficacy, emotional regulation and general well-being. Dental interns frequently encounter significant academic pressure, extended clinical hours, patient administration duties and examination-related stress, rendering them more susceptible to sleep disorders and psychological fatigue. Subpar sleep quality has been linked to diminished focus, poorer clinical efficacy, daytime lethargy and a lower quality of life among healthcare students [2]. Excessive social media use, especially during nocturnal hours, has been recognized as a significant factor in disrupted sleep habits. Research indicates that habitual examination of social networking sites prior to sleep postpones sleep initiation and diminishes sleep length. Exposure to blue light from mobile displays inhibits melatonin production and disturbs circadian rhythms, thereby decreasing restorative sleep [3]. Moreover, social media participation can enhance cognitive and emotional stimulation, induce fear of missing out (FoMO), heighten anxiety and foster obsessive online behavior, all of which detrimentally impact sleep quality [4]. Burnout is a significant issue among dentistry and medical trainees. It is defined by emotional weariness, depersonalization and diminished personal achievement due to prolonged exposure to stress. Dental interns are particularly vulnerable to burnout due to rigorous clinical schedules, academic pressures and professional obligations. Prior research has indicated a

substantial correlation between problematic social media usage and elevated burnout levels among healthcare students and professionals [5]. Numerous studies including university students and healthcare trainees have indicated a favorable correlation between problematic internet or social media usage and diminished sleep quality, anxiety, stress and depressive symptoms [6-8]. Nonetheless, there exists a paucity of research explicitly concerning dental interns, particularly within the Indian context. Comprehending this correlation is essential for formulating measures to enhance mental well-being, sleep hygiene and academic productivity among dental trainees. Therefore, it is of interest to evaluate the relationship between social media consumption, sleep quality and burnout among dental interns.

Materials and Methods:

A cross-sectional questionnaire study was performed among dental trainees to evaluate the relationship between social media usage, sleep quality and burnout. The research was conducted as per Helsinki guidelines after obtaining approval from the Institutional Ethical Committee. The study population comprised dental interns participating in a mandatory rotatory internship during the study period. Interns who consented to participate and provided informed consent were included in the study. Interns absent during data collection or who submitted incomplete questionnaires were eliminated from the study. The sample size was established based on prior literature concerning social media usage and sleep quality among healthcare students, with a confidence level of 95% and a permissible error of 5%. A suitable sample strategy was employed and all eligible interns present during the study period were solicited for participation. Data were gathered by a standardized self-administered questionnaire segmented into four pieces. The initial portion comprised demographic information, including age and gender. The second segment evaluated social media usage habits, encompassing daily usage duration, prevalent platforms, frequency of nocturnal engagement and goals such as academic, entertainment, or communication. The Pittsburgh Sleep Quality

Index, a validated instrument, was utilized to assess subjective sleep quality over the preceding month. The questionnaire evaluated multiple factors, including sleep length, sleep latency, sleep disruptions, daytime dysfunction and overall sleep quality. A global PSQI score exceeding 5 was deemed indicative of suboptimal sleep quality. The Maslach Burnout Inventory was utilized to evaluate burnout in dental interns. The questionnaire assessed three dimensions of burnout: emotional weariness, depersonalization and personal accomplishment. Elevated scores in emotional weariness and depersonalization, along with diminished scores in personal accomplishment, signified increased levels of burnout. Prior to the commencement of the study, the questionnaire underwent pretesting with a limited cohort of interns to evaluate its clarity and feasibility. Essential adjustments were implemented in accordance with the feedback received. The confidentiality and identities of the subjects were preserved throughout the study. The gathered data were input into Microsoft Excel and analyzed utilizing Statistical Package for the Social Sciences version 25.0. Descriptive statistics, including frequency, percentage, mean and standard deviation, were computed. The relationship among social media usage, sleep quality and burnout levels was evaluated by Chi-square

tests and independent t-tests. A p-value below 0.05 was deemed statistically significant.

Results:

A total of 120 dental interns participated in the study. Among them, 72 (60.0%) were females and 48 (40.0%) were males. Most participants reported daily social media usage of more than 3 hours. Instagram and WhatsApp were the most commonly used platforms (Table 1). Poor sleep quality and moderate-to-high burnout levels were observed among a considerable proportion of interns. The majority of dental interns used social media for more than 2 hours daily and nearly three-fourths reported using social media before bedtime. Poor sleep quality was observed in more than half of the participants. Moderate burnout was the most common burnout level reported among interns. Interns with higher daily social media usage showed significantly higher PSQI scores, indicating poorer sleep quality. Burnout scores also increased with increasing duration of social media usage. The association between excessive social media use, poor sleep quality and burnout was found to be statistically significant (Table 2).

Table 1: Distribution of social media usage, sleep quality and burnout among dental interns (n = 120)

Variable	Category	Frequency (n)	Percentage (%)
Daily social media usage	<2 hours	22	18.3
	2–4 hours	54	45.0
	>4 hours	44	36.7
Night-time social media use before sleep	Yes	93	77.5
	No	27	22.5
Sleep quality (PSQI score)	Good sleep quality	38	31.7
	Poor sleep quality	82	68.3
Burnout level	Low	24	20.0
	Moderate	63	52.5
	High	33	27.5

Table 2: Association of daily social media usage with sleep quality and burnout among dental interns

Daily social media usage	Mean PSQI score	Mean burnout score	p-value
<2 hours	4.8 ± 1.6	32.5 ± 6.2	<0.001*
2–4 hours	6.9 ± 2.1	41.8 ± 7.5	
>4 hours	9.1 ± 2.8	52.6 ± 8.4	

*Significant

Discussion:

This study evaluated the relationship between social media usage, sleep quality and burnout in dental interns. The study's findings indicated that a significant percentage of interns utilized social media for extended periods, especially during overnight hours. Participants frequently exhibited poor sleep quality and moderate to high levels of burnout. A statistically significant correlation was identified between prolonged social media usage, diminished sleep quality and elevated burnout levels. In the current study, the majority of dental interns indicated used social media for over two hours everyday, with a significant portion exceeding four hours per day. This discovery illustrates the growing reliance of young adults on digital

platforms for communication, entertainment and educational objectives. Kuss and Griffiths also noted that social networking platforms have become profoundly embedded in the daily routines of university students and healthcare trainees [9]. The widespread availability of cellphones and constant internet connection may account for the elevated incidence of extended social media engagement among dental interns. The current study additionally revealed that a majority of participants engaged with social media prior to sleep. The nocturnal utilization of social media has been recognized as a significant influence on sleep patterns in young adults. Exposure to mobile devices during late hours postpones sleep start and alters circadian rhythm due to the inhibition of melatonin secretion

[10]. This may elucidate the elevated incidence of subpar sleep quality noted among the interns in the current study. The dental internship entails rigorous schedules, clinical assignments, patient management duties and academic pressures, which may exacerbate insufficient sleep and weariness. Suboptimal sleep quality was indicated by over two-thirds of the subjects in the present study. Lemola *et al.* reported analogous findings, noting that nighttime electronic media usage was substantially correlated with reduced sleep duration and increased daytime fatigue in adolescents and young adults [11]. Cain and Gradisar also reported that excessive media consumption negatively impacted sleep quality, sleep length and daytime performance [12]. The results of this study corroborate prior evidence indicating that extensive and frequent social media use adversely impacts healthy sleep patterns. The current study revealed that elevated social media usage correlated with considerably higher PSQI ratings, signifying poorer sleep quality. Individuals who engaged with social media for over four hours each day exhibited the highest average PSQI scores. Wong *et al.* revealed same findings, indicating that problematic smartphone and social media usage was substantially correlated with sleep disruptions and inadequate sleep hygiene practices among university students [13]. A potential explanation is that social media platforms promote incessant engagement via notifications, video material and online interactions, which may extend screen exposure and postpone sleep onset. Burnout emerged as a significant finding among the dental interns in the present investigation. Over fifty percent of the participants exhibited mild burnout and approximately one-third displayed significant levels of burnout. Dental interns frequently encounter psychological stress because to their workload, clinical obligations, examination pressures and the demand for competency attainment. These pressures may intensify when coupled with inadequate sleep quality and excessive digital involvement. Pagnin *et al.* obtained analogous findings, noting a significant prevalence of emotional weariness and burnout among healthcare students subjected to persistent academic stress [14]. The current study revealed a notable escalation in burnout scores along with prolonged social media usage. Interns who utilized social media for more than four hours each day had the highest levels of burnout. Dhir *et al.* observed analogous findings, indicating that obsessive social media usage exacerbates stress, emotional tiredness and mental exhaustion in university students [15]. Excessive online engagement may diminish relaxation time, disrupt sleep, heighten comparative behavior and adversely impact emotional well-being, thus leading to symptoms of burnout. An alternative explanation for the correlation between social media usage and burnout is the phenomenon known as "fear of missing out" (FoMO), wherein individuals have a want to be perpetually engaged with online activities and updates. Przybylski *et al.* indicated that FoMO was significantly correlated with frequent social media monitoring behavior and diminished psychological well-being [16]. Continuous online interaction may heighten emotional fatigue and diminish mental recuperation time, especially among students already subjected to academic and clinical stressors.

The results of this study possess significant clinical and educational ramifications. Dental interns must to be instructed on good digital practices, sleep hygiene and stress management strategies. Institutional wellness initiatives, counseling services and educational workshops on safe social media usage may mitigate burnout and enhance sleep quality among interns. Advocating for restricted screen time prior to sleep and fostering consistent sleep routines may enhance academic achievement and general well-being. The current study exhibited specific limitations. The cross-sectional design of the study precluded the establishment of causal correlations among social media usage, sleep quality and burnout. The data were self-reported and may consequently be susceptible to recollection bias and reporting bias. Furthermore, the investigation was performed exclusively with dental interns from a singular institution, thereby restricting the generalizability of the results. Future multicentric longitudinal research with bigger sample numbers may enhance comprehension of the long-term impacts of social media usage on the mental and physical health of healthcare students.

Conclusion:

We show a substantial correlation between excessive social media use, inadequate sleep quality and high burnout among dental interns. Interns with prolonged social media usage exhibited elevated scores in sleep disturbances and exhaustion. Advocating for good digital practices, adequate sleep hygiene and effective stress management techniques may enhance the overall well-being and academic success of dental interns.

References:

- [1] Kaur K & Gurnani B. *Indian J Ophthalmol.* 2022 **70**:3253. [PMID: 36018096]
- [2] Hyndych A *et al.* *Cureus.* 2025 **17**:e84232. [PMID: 40525051]
- [3] Cerolini S *et al.* *Cogent Ment Health.* 2025 **4**:2594799 [PMID: 41356794]
- [4] Gupta M & Sharma A. *World J Clin Cases.* 2021 **9**:4881 [PMID: 34307542]
- [5] Badri HM *et al.* *Int J Acad Med.* 2023 **9**:11 [DOI:10.4103/ijam.ijam_72_22]
- [6] Alonzo R *et al.* *Sleep Med Rev.* 2021 **56**:101414 [PMID: 33385767]
- [7] Li M *et al.* *Medicine (Baltimore).* 2025 **104**:e42542. [PMID: 40527840]
- [8] Rouvinen H *et al.* *Health Promot Int.* 2021 **36**:1610. [PMID: 33738490]
- [9] Kuss DJ & Griffiths MD. *Int J Environ Res Public Health.* 2011 **9**:3528 [PMID: 22016701]
- [10] Chang AM *et al.* *Proc Natl Acad Sci U S A.* 2015 **112**:1232 [PMID: 25535358]
- [11] Lemola S *et al.* *J Youth Adolesc.* 2015 **44**:405 [PMID: 25204836]
- [12] Cain N & Gradisar M. *Sleep Med.* 2010 **11**:735 [PMID: 20673649]
- [13] Wong HY *et al.* *Int J Environ Res Public Health.* 2020 **17**:1879 [PMID: 32183188]

- [14] Pagnin D et al. *Acad Psychiatry*. 2014 **38**:438 [PMID: 24683060]
[15] Gu J. *J Med Internet Res*. 2025 **27**:e70398. [PMID: 40744489]
[16] Przybylski AK et al. *Comput Human Behav*. 2013 **29**:1841 [DOI:10.1016/j.chb.2013.02.014]
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