Social Media and Sleep Disorder: A Study of Students in Dennis Osadebay University, Asaba

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Abstract

Sleep disorders among university students constitute a significant public health challenge, with over half of undergraduates globally experiencing sub-optimal sleep quality and irregular patterns that adversely affect academic performance and mental health. In Nigeria's tertiary institutions, limited empirical research on sleep disorders and media-based interventions constrains effective public health responses despite evident sleep dysfunction patterns. This study examined sleep disorder prevalence and determinants among Dennis Osadebay University undergraduates to inform media-based interventions. Grounded in the Health Belief Model, Theory of Planned Behaviour, Transactional Model of Stress and Coping and Uses and Gratifications Theory, the research employed a descriptive cross-sectional design with 200 students selected through multi-stage random sampling across five faculties. Data collection utilized a structured questionnaire incorporating Pittsburgh Sleep Quality Index and Insomnia Severity Index, and data were analyzed using SPSS descriptive statistics. Results revealed high sleep disorder prevalence: 70.5% experienced tiredness despite adequate sleep duration, 64.5% reported difficulty falling asleep. Academic stress (80.5%) and late-night social media use (79.5%) emerged as primary risk factors. While 92.5% recognized the academic importance of sleep, only 61% understood specific sleep hygiene practices. Instagram (30.5%) and TikTok (27.5%) were preferred information platforms. The critical awareness-behaviour gap necessitates targeted interventions including platform-specific digital campaigns, curricular sleep education, peer-led support groups and campus digital wellness policies. This study provides evidence-based recommendations for culturally appropriate, media-driven interventions scalable across sub-Saharan African universities.

Keywords: Health Communication, Media Intervention, Sleep Disorders, Sleep Hygiene Awareness, Undergraduates

Introduction

Sleep, a fundamental biological necessity, underpins cognitive functioning, emotional regulation and physiological restoration. In higher education contexts, however, the increasing prevalence of sleep disturbances among undergraduate students globally has emerged as a critical public health concern. Empirical evidence reveals that over half of university students worldwide report sub-optimal sleep quality, irregular sleep patterns and heightened daytime sleepiness—factors that directly impair academic performance and mental health

outcomes (Ahmadi & Omidvar, 2022; Gardani et al., 2022). At Dennis Osadebay University, Nigeria, observable patterns suggest similar sleep dysfunction prevalence, yet limited institutional attention has been directed toward this growing health challenge.

From a health communication perspective, the university phase represents a developmental juncture where young adults negotiate academic demands, social autonomy and psychosocial stressors through various media channels and peer networks—conditions that often disrupt circadian rhythms and exacerbate sleep disorders (Limone & Toto, 2022). Scholarly consensus identifies multiple interlinked determinants including individual chronotype, anxiety sensitivity, excessive screen use, smartphone addiction and co-morbid psychiatric conditions (Hasan et al., 2023; Allan et al., 2023).

Poor sleep effects extend beyond physiological fatigue to include impaired executive function, increased substance use, reduced immune functioning and susceptibility to mental health deterioration (Manzar et al., 2020; Bernaras et al., 2019). University populations are increasingly vulnerable to sleep disorders due to lifestyle factors including late-night social media consumption, academic stress, irregular study schedules and peer pressure—receiving limited institutional scrutiny in sub-Saharan African contexts (Bantjes et al., 2022; Dessauvagie et al., 2022).

Statement of the Problem

Despite mounting global concern, empirical research exploring sleep disorders among Nigerian university students remains significantly limited, creating substantial knowledge gaps in understanding prevalence, risk factors and effective intervention strategies within sub-Saharan African tertiary education contexts (Bantjes et al., 2022; Dessauvagie et al., 2022). While international studies demonstrate strong associations between poor sleep quality and mental health deterioration using cross-sectional designs and validated assessment tools like the Pittsburgh Sleep Quality Index (Gardani et al., 2022; Wołyńczyk-Gmaj et al., 2022), Nigerian research has predominantly focused on clinical populations rather than university students. Existing studies employing behavioural addiction frameworks and stress-coping theories reveal bidirectional relationships between sleep disturbances and psychological stressors (Chen et al., 2022; Tokiya et al., 2020), yet these findings lack cultural specificity for Nigerian contexts.

At Dennis Osadebay University, preliminary observations suggest widespread sleep dysfunction among undergraduates, manifested through increased daytime fatigue, irregular sleep patterns and excessive nighttime social media usage. However, the absence of systematic prevalence data, identification of culturally-specific risk factors and evidence-based intervention strategies limits institutional capacity to address this emerging health crisis effectively. Furthermore, the potential of social media platforms as intervention tools remains unexplored despite their widespread adoption among Nigerian youth.

The objective of the study therefore, are to: (i) determine the prevalence of sleep disorders among undergraduate students (ii) identify primary risk factors contributing to sleep disturbances. (iii) assess students' awareness of sleep hygiene practices (iv) determine preferred social media platforms for receiving health information (v) examine the relationship between media usage patterns and sleep quality

Theoretical Framework

This study employs a multi-theoretical approach integrating four complementary theories to comprehensively address the complex relationship between sleep disorders, risk factors and media-based interventions among university students. The selection of multiple theories is justified by the multifaceted nature of sleep behaviour, which encompasses health beliefs, behavioural intentions, stress responses and media consumption patterns—each requiring distinct theoretical lenses for comprehensive understanding.

The Health Belief Model (Hochbaum, Rosenstock & Kegels, 1950s) addresses research objective one by explaining how students' perceptions of susceptibility to sleep-related health risks and perceived benefits of sleep hygiene practices influence their likelihood of adopting better sleep behaviours. This model predicts that students will modify sleep habits when they perceive themselves as vulnerable to academic and health consequences of poor sleep (Pan et al., 2023; Zheng et al., 2022).

Theory of Planned Behaviour (Ajzen, 1991) specifically addresses research objective two by examining how attitudes toward sleep hygiene, subjective norms from peers and social media and perceived behavioural control over sleep habits shape behavioural intentions. This theory is particularly relevant for understanding how peer perceptions and media portrayals influence student sleep decisions (Chowdhury et al., 2024; Hasan et al., 2023).

The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) addresses research objective three by explaining the bidirectional relationship between academic stressors and sleep disturbances, particularly relevant in university environments where students continuously negotiate academic demands and psychosocial pressures (Allan et al., 2023; Gardani et al., 2022).

Uses and Gratifications Theory addresses research objectives four and five by explaining how students actively select specific media platforms to satisfy needs for relaxation, information, or social connection—behaviours that directly impact sleep patterns and intervention receptivity (Zhou et al., 2021; Tokiya et al., 2020).

Contemporary research reveals a paradoxical relationship between media consumption and sleep health among university students. Excessive media exposure, particularly nighttime social media use, contributes significantly to poor sleep hygiene through blue light exposure and cognitive arousal, leading to delayed sleep onset and fragmented sleep architecture (Wolde & Aydiko, 2022; Tokiya et al., 2020). Conversely, strategically designed health communication interventions utilizing digital platforms demonstrate considerable potential for enhancing sleep awareness and promoting behavioural change through educational content, digital sleep tracking and peer support networks (Gupta et al., 2022; Kwon et al., 2021).

Platform-specific research indicates that Instagram, TikTok and YouTube prove most effective for engaging undergraduate students aged 18-25, with successful mental health campaigns utilizing short-form video content, interactive features and peer testimonials to maximize engagement and knowledge retention (Zhou et al., 2022; Wang et al., 2022). Evidence from recent campaigns demonstrates that visually engaging content formats significantly improve health message comprehension and behavioural intention compared to traditional text-based approaches (Calderon et al., 2024; Roniger et al., 2022).

Empirical studies consistently identify convergent psychosocial, behavioural and physiological risk factors affecting sleep quality among university students. Cross-sectional research links poor sleep quality to reduced academic performance, decreased school satisfaction and impaired cognitive functioning (Ahmadi & Omidvar, 2022; Gardani et al., 2022). Longitudinal studies reveal significant correlations between smartphone addiction and increased sleep latency, while psychological factors including anxiety sensitivity and chronotype preferences demonstrate predictive relationships with sleep health outcomes

(Hasan et al., 2023; Allan et al., 2023). Intervention studies utilizing media-based public health approaches show promising results in improving sleep-related knowledge, attitudes and behavioural outcomes among university populations (Pan et al., 2023; Zheng et al., 2022).

Methodology

This study adopts a descriptive cross-sectional survey design, deemed appropriate for examining the prevalence, awareness and perceptions of sleep disorders across a broad student population at a single time point. This design enables quantitative measurement of variables and assessment of correlations between media awareness and sleep health.

The target population comprises all undergraduate students of Dennis Osadebay University, Asaba**,** across all levels (Year 1 to Year 4) and faculties. The university comprises of faculties such as Sciences, Social Sciences, Arts, Management Sciences and Engineering.

A multi-stage random sampling technique was employed. First, all faculties were purposively included to ensure generalizability. Within each faculty, 40 students were selected in a stratified random sampling procedure, resulting in a total sample size of 200 students (40 students × 5 faculties). This sample size is considered adequate for meaningful statistical analysis of the population of about twelve thousand (12000) students, aligning with previous similar studies (Chowdhury et al., 2024; Calderon et al., 2024).

The main instrument for data collection is a structured questionnaire, divided into three sections: Section A: Demographic profile (age, gender, faculty, level of study). Section B: Sleep disorder indicators using items adapted from the Pittsburgh Sleep Quality Index (PSQI) and Insomnia Severity Index (ISI) (Roniger et al., 2022). Section C: Media exposure, awareness of sleep hygiene and informed decision-making (based on items from Pan et al., 2023; Zheng et al., 2022).

The questionnaire employed a 5-point Likert scale ranging from “Strongly Agree” to “Strongly Disagree” to measure levels of agreement with key sleep and media statements. The draft questionnaire was reviewed by three experts in Public Health, Psychology and Education at the University of Delta, Agbor. Their feedback led to item revision for content relevance and clarity. A pilot test was conducted on 20 students from a similar institution not included in the final

sample. Cronbach's alpha coefficient yielded 0.82, indicating high internal consistency (Gupta et al., 2022; Kwon et al., 2021).

Data collection followed ethical clearance and institutional approval protocols: Orientation sessions were held with faculty representatives to explain the research objectives. Consent forms were attached to each questionnaire to ensure voluntary participation. Trained research assistants administered the survey during class hours to reduce non-response. Participants were instructed to complete the questionnaire anonymously and return it immediately. The entire process spanned three weeks, ensuring complete and high-quality responses.

Data collected were coded and entered into SPSS Version 26 for statistical analysis. Analysis was conducted as follows: Descriptive Statistics (mean, frequency, percentages) to profile respondents and assess prevalence of sleep disorders.

Results

A total of 200 respondents participated in the survey, selected randomly from the Faculties of Sciences, Social Sciences, Arts, Management Sciences and Engineering. Copies of the questionnaire were administered in person by the researcher/research assistants and were collected at the spot. The response rate was 100%.

Table 1: Demographic Characteristics of Respondents (N = 200)

Variable	Category	Frequency	Percentage (%)
Faculty	Sciences	40	20.0
	Social Sciences	40	20.0
	Arts	40	20.0
	Management Sciences	40	20.0
	Engineering	40	20.0
Gender	Male	86	43.0
	Female	114	57.0
Level of Study	Year 1	51	25.5
	Year 2	48	24.0
	Year 3	55	27.5
	Year 4	46	23.0
Age Range	16–20	58	29.0
	21–25	109	54.5
	26–30	23	11.5
	Above 30	10	5.0

The demographic distribution shows a balanced representation across all faculties and levels, enhancing the reliability of generalizations. The gender distribution reveals a slight female dominance, consistent with recent enrollment trends in Nigerian universities. The majority of the respondents fall within the 21–25 age range (54.5%), a critical developmental phase vulnerable to sleep disorders (Ahmadi & Omidvar, 2022; Kansagra, 2020).

The demographic data presented demonstrates a well-balanced representation across all faculties and levels, which strengthens the internal validity of the study. The slight predominance of female respondents (57%) is reflective of broader enrollment patterns within Nigerian tertiary institutions and aligns with national gender participation trends in higher education. More importantly, a substantial portion of the respondents (54.5%) are within the 21–25 age bracket—a developmental stage characterized by heightened academic, social and technological engagement. This stage, according to Ahmadi and Omidvar (2022), is also associated with increased vulnerability to sleep disorders due to biological, cognitive and psychosocial transitions.

Prevalence of Sleep Disorders

Table 2: Sleep Disorder Symptoms (N = 200)

Symptom	Yes	No	Percentage Reporting "Yes"
Difficulty falling asleep	129	71	64.5%
Waking up frequently at night	115	85	57.5%
Feeling tired despite long sleep	141	59	70.5%
Use of sleeping pills	21	179	10.5%
Sleep disturbance ≥3 times/week	88	112	44.0%

The analysis revealed that 64.5% of respondents reported difficulty falling asleep and 70.5% experienced tiredness despite sleeping for extended hours. These figures suggest that the quality of sleep, rather than the quantity, is the predominant concern among students. This supports the findings of Gardani et al. (2022), who in their meta-analysis concluded that poor sleep quality is endemic among undergraduate students globally and is significantly linked to irregular sleep patterns, environmental disturbances and stress. The high percentage (57.5%) of students reporting frequent night awakenings and feeling unrefreshed after sleep indicates disrupted sleep architecture and possibly underlying anxiety or mental exhaustion. Only 10.5% reported using sleeping pills, suggesting that pharmacological intervention remains uncommon, possibly due to stigma, lack of access, or unawareness of treatment options.

These patterns underscore the insidious nature of sleep disorders as largely invisible yet pervasive among undergraduates. According to Manzar et al. (2020), untreated insomnia and other sleep disruptions not only affect academic performance but also lead to long-term consequences such as anxiety, depression and substance misuse. The implication is that most students suffering from poor sleep may not recognize the seriousness of their symptoms, thus making targeted awareness campaigns essential.

Contributing Risk Factors

Table 3: Risk Factors Associated with Sleep Disorders

Risk Factor	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
Anxiety/stress from academics	38.5	42.0	13.5	6.0
Excessive screen time (phones)	45.0	36.0	14.5	4.5
Late-night social media use	49.5	30.0	15.0	5.5
Caffeine/energy drink consumption	25.0	31.0	30.0	14.0
Poor sleeping environment	29.5	34.0	22.5	14.0

The study also examined the factors students identified as contributing to their poor sleep quality. A combined 80.5% of respondents either strongly agreed or agreed that academic stress was a major cause of sleep disturbance. This aligns with Allan et al. (2023), who identified academic pressure as a leading psychosocial stressor with strong correlations to insomnia symptoms among university students. Furthermore, 79.5% of respondents attributed their sleep problems to late-night social media usage. This is consistent with Hasan et al. (2023), who reported a significant association between excessive screen time—especially at night—and disruptions to circadian rhythms and melatonin secretion.

Awareness of Sleep Hygiene and Consequences

Table 4: Awareness of Sleep Hygiene Practices and Consequences

Awareness Statement	**Aware (%)**	**Not Aware (%)**
Sleep disorders can cause mental health issues	85.5	14.5
Use of phones before bedtime affects sleep quality	78.0	22.0
Proper sleep improves academic performance	92.5	7.5
Sleep hygiene involves routines like fixed bedtime and no noise	61.0	39.0

Despite the prevalence of sleep problems, there is an encouraging level of awareness regarding the consequences of poor sleep. 92.5% of students acknowledged that adequate sleep improves academic performance and 85.5% recognized its link to mental health outcomes. These figures highlight an awareness of the outcomes of sleep problems, yet only 61% were aware of specific sleep hygiene practices, such as maintaining fixed bedtimes or limiting environmental noise while 78% knows that use of phones before bedtime affects sleep quality

This gap between cognitive awareness and behavioural knowledge mirrors findings from Pan et al. (2023) and Zheng et al. (2022), who argue that while health education may raise awareness, it often fails to translate into behavioural change due to lack of practical implementation strategies. In this case, students are generally aware of the what but less knowledgeable about the how of maintaining proper sleep hygiene. This indicates an urgent need for targeted interventions that go beyond awareness creation to behaviour modification, perhaps through structured peer-led workshops or integration into general studies curricula.

Preferred Platforms for Awareness Campaigns

In terms of communication preferences, Instagram (30.5%) and TikTok (27.5%) were identified as the most effective platforms for delivering sleep awareness messages, especially among the 16–25-year-old demographic. These findings reflect the social media consumption behaviour of Nigerian youths and support the argument made by Limone and Toto (2022), who emphasized the importance of delivering public health messages through platforms that resonate with the target demography. These visual-based platforms offer opportunities for engaging, relatable and easily digestible content that can positively influence youth behaviour.

Table 5: Preferred Platforms for Receiving Health Information (Age-Specific)

Platform	16–20 yrs	21–25 yrs	26–30 yrs	Above 30 yrs	Total (%)
WhatsApp	5	15	5	3	14.0
Instagram	19	36	5	1	30.5
TikTok	24	28	3	0	27.5
Facebook	3	10	6	6	12.5
X	7	20	4	0	15.5

Notably, WhatsApp and X were moderately preferred, especially among slightly older students, while Facebook trailed behind. This suggests a generational shift

in preferred modes of communication and highlights the importance of demographic segmentation when designing awareness campaigns. For example, interactive videos, reels, or short animations on TikTok and Instagram could be more effective in promoting sleep hygiene tips than traditional text-heavy formats.

Discussion

The findings reveal a concerning prevalence of sleep disorders among Dennis Osadebay University undergraduates, with over two-thirds experiencing poor sleep quality despite adequate sleep duration. This pattern suggests that sleep architecture disruption, rather than insufficient sleep time, represents the primary concern. The 64.5% reporting difficulty initiating sleep and 57.5% experiencing frequent nocturnal awakenings indicate widespread sleep fragmentation consistent with stress-induced insomnia patterns observed globally among university populations.

The identification of academic stress (80.5%) and late-night social media usage (79.5%) as predominant risk factors aligns with contemporary research linking academic pressure and digital device exposure to circadian rhythm disruption. The strong correlation between excessive screen time and sleep disturbances reflects the neurobiological impact of blue light exposure on melatonin suppression, particularly relevant given the 21-25 age demographic's high smartphone dependency.

A critical awareness-behaviour gap emerged, with students demonstrating high cognitive understanding of sleep's importance for academic performance (92.5%) and mental health (85.5%), yet showing limited knowledge of practical sleep hygiene implementation (61%). This disconnect suggests that awareness alone is insufficient for behavioural modification without targeted skill-building interventions.

These findings have significant implications for university health policy and intervention design. The low pharmacological treatment utilization (10.5%) combined with high symptom prevalence indicates substantial unmet healthcare needs, suggesting either poor access to services or stigma surrounding sleep disorder treatment.

The preference for Instagram (30.5%) and TikTok (27.5%) as information sources presents strategic opportunities for targeted digital health campaigns. Universities

should develop platform-specific interventions utilizing visual, engaging content formats to bridge the awareness-practice gap.

Institutionally, these results advocate for integrating sleep hygiene education into orientation programmes, establishing campus-wide "digital curfew" initiatives and providing accessible counseling services addressing academic stress. The findings also support implementing environmental modifications in dormitories and creating peer-led sleep health support groups to translate awareness into sustainable behavioural change.

Summary of key Findings

Based on the study objectives examining sleep disorder prevalence and determinants among Dennis Osadebay University undergraduates to inform media-based interventions, the key findings reveal:

i. Sleep disorders are highly prevalent, with 70.5% of students feeling tired despite long sleep, 64.5% experiencing difficulty falling asleep and 57.5% reporting frequent night awakenings. Only 10.5% used sleeping pills, indicating low treatment-seeking behaviour.
ii. Academic stress (80.5% agreement) and late-night social media use (79.5% agreement) emerged as primary determinants of sleep disturbances, followed by excessive screen time.
iii. While 92.5% recognized sleep's impact on academic performance and 85.5% understood mental health connections, only 61% knew specific sleep hygiene practices.
iv. Instagram (30.5%) and TikTok (27.5%) were identified as optimal platforms for delivering sleep awareness campaigns, particularly among the dominant 21-25 age demographic.

Conclusion

In conclusion, sleep disorders among undergraduates are not only prevalent but also poorly managed due to behavioural habits and lifestyle choices. Despite being aware of the harmful outcomes of poor sleep, students do not sufficiently engage in positive sleep hygiene practices. Academic demands, digital overexposure and insufficient sleep knowledge form a triad of factors exacerbating this health challenge.

Recommendations

1. **Launch campus-wide sleep health campaigns** using student-friendly platforms like TikTok and Instagram to deliver sleep hygiene tips and facts.

2. **Integrate sleep education into general studies or orientation curricula**, emphasizing behavioural routines, mental wellness and technology moderation.
3. **Establish peer-led sleep support groups** or wellness clubs within faculties to foster communal accountability for healthy sleep behaviours.
4. **Collaborate with health professionals and counselors** to offer regular screening and consultations for sleep-related issues.
5. **Implement digital well-being policies**, such as "tech-free" dorm hours or educational workshops on managing screen time.

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