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Original Article

Assessing the Impact of Mobile Device Usage on Academic Performance, Sleep Quality, and Lifestyle Habits of College Students in Kudal District, Sindhudurg

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Abstract

This research investigates mobile device usage among 200 college students aged 18 to 21 years in Sant Rawool Maharaj Mahavidyalaya, Kudal, Sindhudurg, during June 2023 to May 2024. The students use their devices for an average of 4 to 6 hours daily, mainly during daytime and late evening hours. Excessive screen time has been linked with poorer academic results, difficulty concentrating, disturbed sleep, and health issues such as headaches and eye discomfort. Unhealthy lifestyle choices like consumption of fast food and sedentary routines further worsen their health. The study highlights the need for awareness and behavioural modifications to enhance students' health and academic achievements.

Keywords: *Mobile devices, academic performance, sleep, health, students, Sindhudurg*

Introduction

With the advent of smartphones, tablets, and portable digital gadgets, the way young adults communicate, learn, and entertain themselves has undergone a drastic change. As of 2023, these devices have become an integral part of everyday life, especially among college students, who use them for academic work, social networking, entertainment, and gathering information. However, this rapid increase in mobile device use has raised concerns among researchers and health professionals about possible negative effects.Young adulthood is a crucial phase marked by rapid physical, mental, and social development. Excessive exposure to screens during this period can disturb natural sleep cycles, impair cognitive abilities, and promote unhealthy lifestyle habits. Numerous studies have shown that high screen time correlates with reduced attention span, declining academic performance, sleep problems, and mental health issues such as anxiety and depression (Lepp et al., 2014; Turel et al., 2018). In Kudal District, Sindhudurg, informal observations suggest that students spend considerable time on their mobile phones, often at the expense of their studies and health. This study aims to systematically examine these patterns, explore their implications, and suggest measures to reduce adverse effects.

Research Aims

To measure the daily mobile device usage among college students
To evaluate the impact on academic performance
To analyze the relationship between screen time and sleep patterns
To assess health and lifestyle consequences of excessive device use
To recommend strategies for healthier habits

Literature Review

Recent research has extensively explored how mobile device use influences students' health and academic results.

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1 Mobile Usage and Academic Performance

Excessive screen time can hamper cognitive functions like attention, memory, and decision-making, which are essential for good academic performance (Cain & Gradisar, 2010). A study by Lepp et al. (2014) found that students spending more than 3 hours daily on their phones had significantly lower GPA scores compared to those with less device use. Distractions from notifications, social media, and online entertainment can reduce study focus, leading to poorer academic outcomes.

2 Effect on Sleep Patterns

The blue light emitted by screens suppresses melatonin production, delaying sleep onset and decreasing sleep duration (Harvard Medical School, 2012). Sleep deprivation affects concentration, memory retention, and overall mental health (Levenson et al., 2017). Turel et al. (2018) observed that students engaging in late-night device usage reported increased fatigue and reduced academic engagement.

3 Physical and Psychological Well-being

Long hours on devices are associated with eye strain, headaches, neck pain, and musculoskeletal problems (Rosenfield, 2011). Psychologically, overuse of social media and gaming can lead to anxiety and depression (Kuss & Griffiths, 2017). Sedentary lifestyles linked with excessive device use also increase risks of obesity and related health issues.

4 Lifestyle and Behavioural Patterns

Studies indicate that heavy device use often coincides with unhealthy eating habits, such as consuming fast foods, and reduced physical activity (Turel et al., 2018). Peer influence and digital trends often reinforce dependency on gadgets, sometimes at the cost of health and academic sincerity. Despite these findings, region-specific research on Indian university students, especially in rural and semi-urban settings like Sindhudurg, remains limited. This study aims to bridge that gap with localized data and tailored recommendations.

Methodology

1 Study Area and Participants

The study was carried out at Sant Rawool Maharaj Mahavidyalaya in Kudal, Sindhudurg district, Maharashtra. The college caters to students from diverse socio-economic backgrounds, primarily from rural and semi-urban communities.

2 Sample Size and Selection

A random sampling method was used to select 200 students aged 18-21 years from different courses, ensuring demographic diversity.

3 Data Collection Tools

Data was collected through:

Structured Questionnaires: To gather quantitative data on daily mobile use, sleep patterns, dietary habits, physical activity, and lifestyle.

Academic Records: To analyze recent test scores and attendance.

Interviews and Focus Groups: To gain qualitative insights into students' perceptions and behavioural tendencies regarding device use.

Observation: Researchers observed student engagement during classes and social interactions.

4 Data Analysis

The collected data was processed using SPSS software, employing descriptive statistics, correlation analysis, and regression models to explore relationships between variables like screen time, academic scores, and sleep duration.

Results

1 Mobile Usage Patterns

On average, students used their mobile phones for 4 to 6 hours daily, with some reporting up to 8 hours during weekends. Usage was mostly during the day and late evening, with many students staying awake late into the night, disrupting their sleep routines.

2 Academic Performance and Focus

Students with higher mobile usage showed a decline in academic performance. Those spending more than 5 hours daily on their phones had an average GPA 0.8 points lower than students with less than 2 hours of usage. Classroom observations revealed decreased attention, frequent distractions, and lower participation among heavy users. A statistical analysis showed a significant negative correlation ($r = -0.65$, $p < 0.01$) between screen time and academic scores. Regression analysis suggested that each extra hour spent on mobile devices could lead to a reduction of approximately 0.15 points in GPA.

3 Sleep and Health Issues

Most students slept after midnight, with only 20% getting the recommended 7-8 hours of sleep. High mobile users averaged less than 6 hours of sleep. Many reported headaches, eye discomfort, neck pain, and fatigue.Sleep quality

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assessments indicated that students engaging in late-night device use experienced poorer sleep and felt more drowsy during the day, affecting their concentration and motivation.

4 Lifestyle and Psychological Well-being

Dietary habits leaned heavily towards fast foods such as burgers, fries, and fried snacks, often consumed late at night. Physical activity was minimal, with most engaging in less than 30 minutes of exercise weekly.Qualitative feedback revealed feelings of decreased enthusiasm and mood swings, often linked to sleep deprivation and unhealthy habits. Peer influence and social media trends significantly contributed to gadget dependency.

Discussion

The findings clearly demonstrate a strong link between extensive mobile device use and negative academic, health, and lifestyle outcomes among college students in Kudal.

1 Effect on Academic Performance

The negative correlation between screen time and GPA aligns with earlier studies (Cain & Gradisar, 2010; Lepp et al., 2014). Distractions from social media and entertainment apps reduce study focus, while sleep deprivation caused by late-night device use further hampers cognitive functions.

2 Sleep Disruption and Health Risks

Blue light from screens suppresses melatonin, delaying sleep (Harvard Medical School, 2012). Students often sacrifice sleep to engage with their devices, leading to fatigue, mood disturbances, and reduced immunity. Physical complaints such as headaches and eye strain are consistent with prolonged sedentary behaviour and poor ergonomic habits (Rosenfield, 2011).

3 Lifestyle and Psychological Effects

Unhealthy eating patterns and inactivity increase physical health risks. Psychological issues like anxiety and depression are common among heavy device users, fueled by social media dependence and reduced real-world interactions (Turel et al., 2018; Kuss & Griffiths, 2017).

4 Regional Context

In rural and semi-urban Sindhudurg, awareness about healthy device use is limited. Easy access to affordable smartphones and peer influence intensify usage patterns, often without guidance on moderation.

Conclusion

This study highlights that excessive mobile device usage among college students in Kudal hampers academic success, disturbs sleep, and deteriorates health and lifestyle habits. These interconnected issues can create a cycle of fatigue, reduced motivation, and declining well-being, with potential long-term repercussions if not addressed. It is crucial for educational institutions, parents, and policymakers to work together to promote responsible device use, encourage healthy lifestyles, and improve sleep hygiene.

Recommendations

1 Awareness & Education

Conduct campaigns highlighting the risks of excessive screen time
Incorporate digital well-being topics into college curricula
Organize workshops on sleep hygiene, ergonomics, and healthy eating

2 Behavioural Strategies

Promote daily limits on device usage
Encourage peer-led groups for healthy habits

3 Infrastructure & Support Services

Provide counselling services for behavioural change
Facilitate sports and physical activity facilities

4 Policy Measures

Limit late-night device use, especially during exams
Monitor and guide students' digital habits effectively

Future Research

Further longitudinal studies are needed to explore how mobile usage impacts mental health, academic progress, and physical health over time. Additionally, examining socio-economic and cultural factors influencing gadget dependence in rural Indian settings can help tailor more effective interventions.

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