Research Paper

A Study on Internet Addiction, Sleep Quality, And Academic Performance Among Residential and Non-Residential Students

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ABSTRACT

The study investigates the impact of internet addiction on sleep quality and academic performance among residential and non-residential students. A sample of 120 students was selected (60 residential, 60 non-residential). Internet Addiction Test (Young, 1998), Pittsburgh Sleep Quality Index (Buysse, 1989), and Academic Performance Scale (Carson et al.) were used for data collection. Results showed no significant difference in internet addiction, sleep quality, or academic performance between the two groups. However, significant correlations were found: higher internet addiction was linked to poorer sleep quality, and both negatively impacted academic performance.

Keywords: Internet addiction, Sleep quality, Academic performance, Residential students, Non-residential students

Internet Addiction

Internet addiction is defined as the excessive or compulsive use of the internet to the extent that it interferes with daily life. It encompasses behaviors such as constant social media use, online gaming, and general browsing. Studies have shown that excessive internet usage negatively impacts mental and physical health, as well as social interactions and academic performance.

Sleep Quality

Sleep quality refers to how well one sleeps, including factors such as sleep duration and restfulness. Good sleep is essential for students, affecting memory consolidation, learning, and emotional regulation. Internet addiction often disrupts sleep patterns, leading to sleep deprivation and associated cognitive deficits.

Academic Performance

Academic performance is a measure of a student's success in their studies, usually indicated by grades. Internet addiction and poor sleep quality have been shown to impair cognitive functions like memory and attention, directly affecting academic success.

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Residential vs. Non-Residential Status

Living arrangements can influence student behavior, including their internet usage, sleep patterns, and academic performance. Residential students may experience more structured environments compared to non-residential students, who might have more unregulated internet use.

REVIEW OF LITERATURE

This 2018 study by Deeksha S and Lancy D'Souza examined pre-university students in Mysuru, using the Internet Addiction Test (IAT) and Pittsburgh Sleep Quality Index (PSQI). It found that increased internet addiction significantly decreased sleep quality among female students.

In 2024, Mohammad Hussain Faheed Alyami and Huda Shaban Awed studied medical students in southern Saudi Arabia. They used the IAT and PSQI, finding that those online for six or more hours experienced poorer sleep quality and higher internet addiction severity.

This 2019 study by Gulsun Ayran, Gulsum Gundogdu, and Arslan Isik assessed students at Erzincan Binali University. Using the Young Internet Addiction Questionnaire and PSQI, results indicated that internet addiction negatively affected sleep quality, leading to sleep disorders.

Conducted in 2023 by Vinh Ba Tran and colleagues, this study on high school students in Dong Hoa, Vietnam, utilized the short Internet Addiction Test (s-IAT) and PSQI. It found a high prevalence of both internet addiction and poor sleep quality, with a strong association between the two.

This 2018 study by Ayesha Beeshi Alqarni and others evaluated medical students at Taif University. Using PSQI and academic grades, it found a negative correlation between sleep quality and academic performance.

In 2024, Yasin Guclu and colleagues studied high school students in Boyabat, Sinop. They found that both internet and smartphone addiction negatively impacted sleep quality and academic performance using multiple assessment tools.

This 2017 study by Champion Tobi Seun and Kolawole Samuel Mosaku examined undergraduates at Obafemi Awolowo University. Results indicated that students with good sleep quality had significantly better academic performance.

In May 2015, Muhammad Alamgir Khan and colleagues studied MBBS students at Army Medical College, Rawalpindi. Using the Young Internet Addiction Scale, they found a negative correlation between internet addiction scores and academic performance.

This 2020 study by Arslaan Javaeed and colleagues assessed medical students at Poonch Medical College. Using the Young Internet Addiction Test and Spearman Rank Correlation, it confirmed that internet addiction negatively impacts academic performance.

In May 2023, Ranjit Kumar Behera and others studied students from various colleges affiliated with Sambalpur University. They found that academic performance could be

significantly predicted by internet addiction, assessed using the Young Internet Addiction Scale.

METHODOLOGY

Aim

To study the impact of internet addiction on sleep quality and academic performance among residential and non-residential students.

Objectives
1. To examine differences in internet addiction, sleep quality, and academic performance between residential and non-residential students.
2. To study the relationship between internet addiction and sleep quality.
3. To study the relationship between internet addiction and academic performance.

Hypotheses
1. There is no significant difference in internet addiction between residential and non-residential students.
2. There is no significant difference in sleep quality between residential and non-residential students.
3. There is no significant difference in academic performance between residential and non-residential students.
4. There is no significant relationship between internet addiction and sleep quality.
5. There is no significant relationship between internet addiction and academic performance.

Sample

A purposive sample of 120 students was selected, equally divided between residential and non-residential students (60 each).

Residential	Non-Residential	TOTAL
60	60	120

Research Design

The study used a comparative and correlation design. The Independent variables were residential status and internet addiction, while the dependent variables were sleep quality and academic performance.

Tools
1. **Internet Addiction Test (IAT)** – Developed by Young (1998), used to measure internet addiction levels.
2. **Pittsburgh Sleep Quality Index (PSQI)** – Developed by Buysse (1989), used to assess sleep quality.
3. **Academic Performance Scale** – Developed by Carson et al., used to measure students' academic success.

Procedure

Participants were given the IAT, PSQI, and Academic Performance Scale through a survey. Confidentiality was assured, and informed consent was obtained.

## RESULTS AND DISCUSSION

Socio-Demographic Characteristics:

Table: 1 The Findings of the Socio-Demographic Characteristics of the Study Participants (n=120)

Variables	Group	M	SD	F	%
Age		22.04	1.33		
Gender	Male			65	54.2
	Female			55	45.8
Region	Rural			73	60.8
	Urban			47	39.2
Residency Type	Residential			60	50
	Non-residential			60	50

This table 1 provides an overview of the participants' demographic characteristics. There are 120 participants, equally divided between residential and non-residential students (50% each). The average age of participants is 22.04 years, with a standard deviation of 1.33, indicating a relatively young and homogeneous group in terms of age.

The gender distribution shows that 54.2% of participants are male and 45.8% are female. The regional distribution indicates a higher representation of students from rural areas (60.8%) compared to urban areas (39.2%).

Figure 1. The Gender Distribution
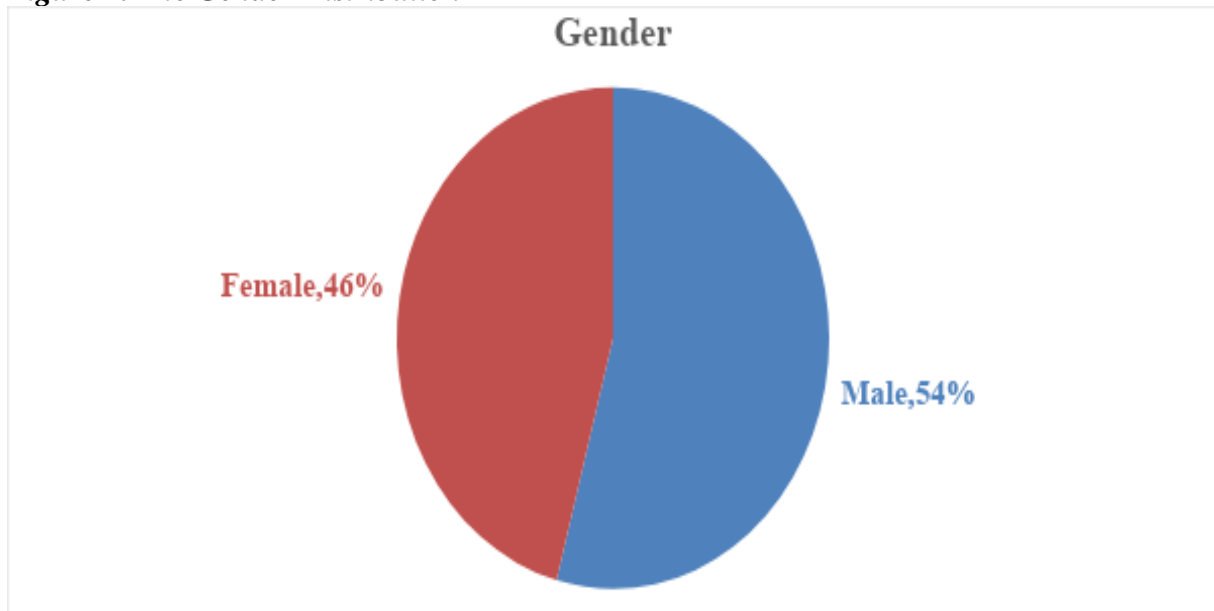
COMPARATIVE ANALYSIS:

➢ *Ho: There will be no significant difference in internet addiction, sleep quality, and academic performance between residential and non-residential students.*

Table 2 The Findings of the Independent t-test (n=60 for each group)

| Variables	Groups	M	SD	T	P
IA	Residential	52.48	10.93	0.464	0.644
	Non-residential	51.56	10.71		
SQ	Residential	41.56	12.71	-0.104	0.918
	Non-residential	41.81	13.67		
AP	Residential	27.01	5.43	-1.155	0.25
	Non-residential	28.21	5.92		

Note: IA= Internet Addiction; SQ= Sleep Quality; AP=Academic Performance

This table 2 shows the mean, t and p values of internet addiction (IA), sleep quality (SQ), and academic performance (AP) between residential and non-residential students.

- **Internet Addiction (IA)**: The mean IA score for residential students is 52.48, compared to 51.56 for non-residential students. The t-value (0.464) and p-value (0.644) suggest no significant difference between the two groups in terms of internet addiction.
- **Sleep Quality (SQ)**: The sleep quality scores are almost identical between the two groups, with residential students scoring 41.56 and non-residential students scoring 41.81. The t-value (-0.104) and p-value (0.918) indicate no significant difference in sleep quality between the groups.
- **Academic Performance (AP)**: The mean AP score for residential students is 27.01, while non-residential students score slightly higher at 28.21. However, the t-value (-1.155) and p-value (0.25) show no significant difference between the groups regarding academic performance.

There are no significant differences between residential and non-residential students across all three variables (IA, SQ, AP), hence null hypothesis is accepted.

Figure 2 The Distribution of Residential Type
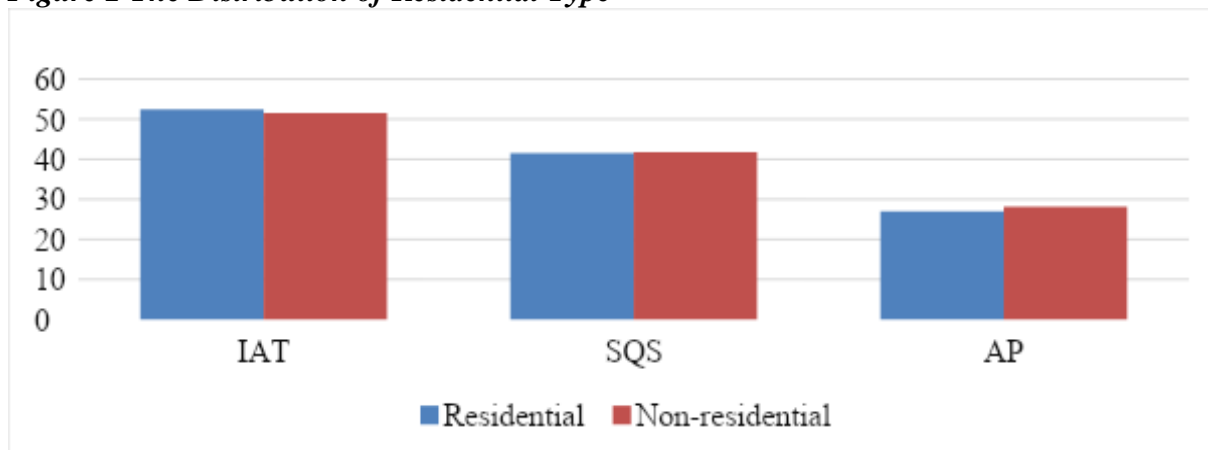
Pearson Correlation Coefficient:

*Table 3 The Findings of the Pearson Correlation Coefficient Between the Study Variables (n=120)*

Variables	IAT	SQS	AP
IAT	1		
SQS	.532**	1	
AP	-.459**	-.501**	1

This table 3 shows the correlation value between internet addiction, sleep quality, and academic performance.

- ***H₀: There is no significant relationship between internet addiction and sleep quality.***
  The correlation analysis shows that there is a significant positive correlation ($r = 0.532$, $p < 0.01$) between internet addiction and sleep quality. This suggests that higher internet addiction is associated with poorer sleep quality, hence the null hypothesis is rejected.
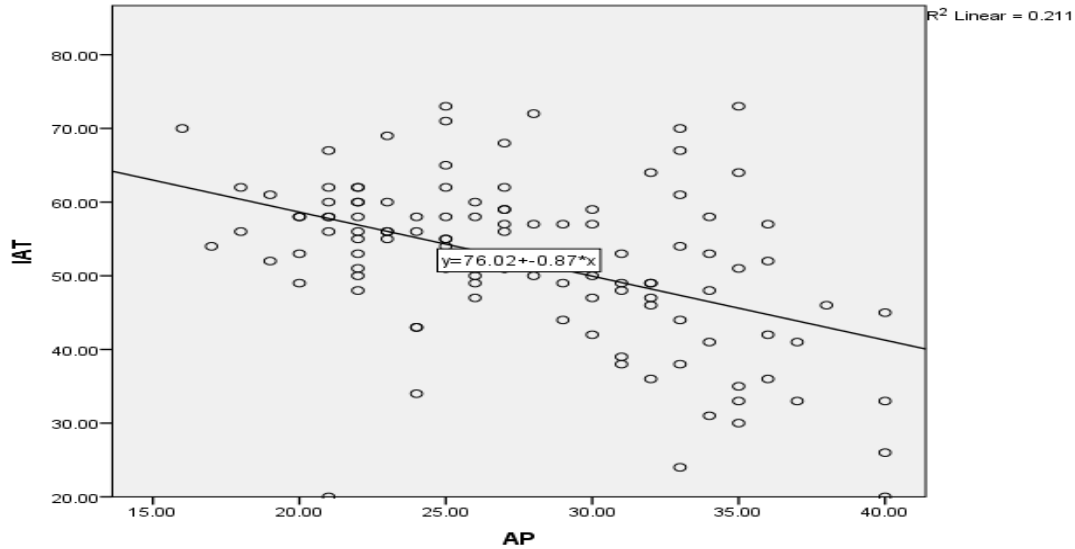
Figure 3 The Scatter Plot Representing the Relationship Between Internet Addiction and Sleep Quality (n=120)
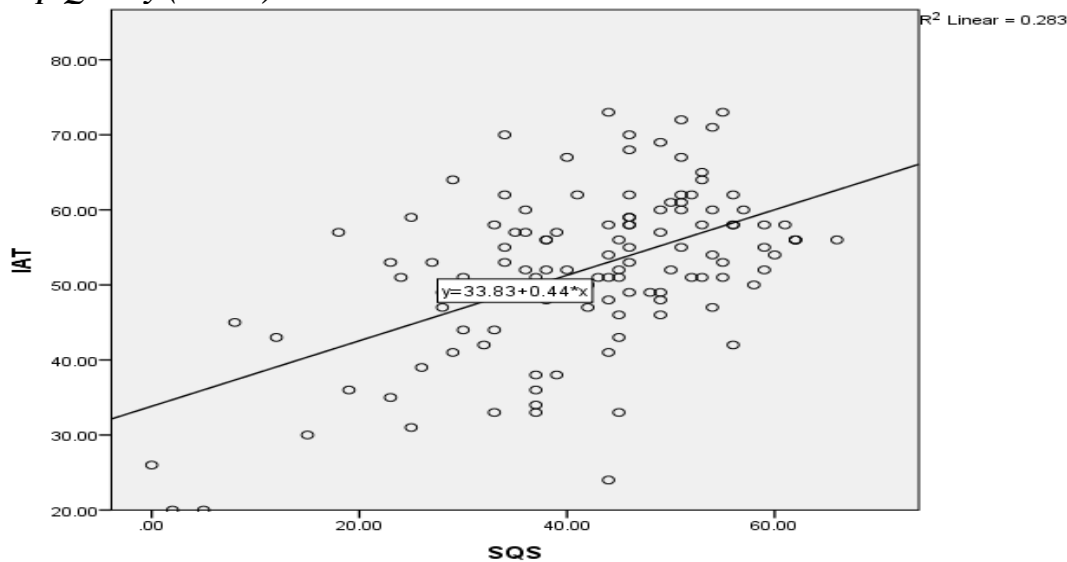
- ***H₀: There is no significant relationship between internet addiction and academic performance.***
  The correlation analysis shows that there is a significant negative correlation ($r = -0.459$, $p < 0.01$) between internet addiction and academic performance, indicating that higher internet addiction is linked to lower academic performance, hence the null hypothesis is rejected.

Figure 4 The Scatter Plot Representing the Relationship Between Internet Addiction and Academic Performance (n=120)

- *H_0: There is no significant relationship between sleep quality and academic performance.*

  The correlation analysis shows that there is a significant negative correlation ($r = -0.501$, $p < 0.01$) between sleep quality and academic performance, suggesting that poorer sleep quality is associated with lower academic performance, hence the null hypothesis is rejected.

Figure 5The Scatter Plot Representing the Relationship Between Sleep Quality and Academic Performance (n=120)
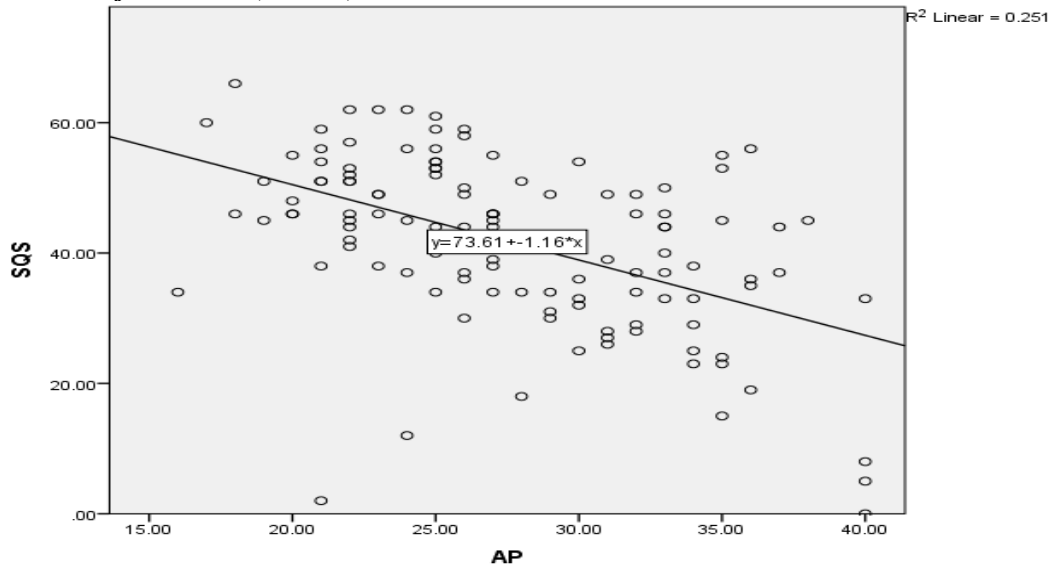
Simple Linear Regression:

Table 4 The Findings of the Liner Regression Analysis for Sleep Quality (n=120)

IV	R2	B	SEB	T	F	P
Constant	0.283	7.893	5.049	1.571	46.620	0.119
IAT		0.649	0.095	6.828		0.000

➤ *H₀: Internet addiction does not significantly predict sleep quality.*

The regression analysis shows that internet addiction is a significant predictor of sleep quality, with a coefficient (B = 0.649, p < 0.001). The model explains 28.3% of the variance in sleep quality (R² = 0.283). Internet addiction significantly affects sleep quality, supporting the hypothesis that excessive internet use can disrupt sleep patterns. The model explains a moderate amount of variance, indicating that other factors may also contribute to sleep quality, hence the null hypothesis is rejected.

Table 5 The Findings of the Liner Regression Analysis for Academic Performance (n=120)

IV	R2	B	SEB	T	F	P
Constant	0.211	40.229	2.295	17.529	31.487	0.000
IAT		-0.242	0.043	-5.611		0.000

➤ *H₀: Internet addiction does not significantly predict academic performance.*

The regression analysis for academic performance shows that internet addiction is a significant predictor of academic performance, with a negative coefficient (B = -0.242, p < 0.001). The model explains 21.1% of the variance in academic performance (R² = 0.211).

Internet addiction has a significant negative effect on academic performance, reinforcing the idea that excessive internet use may detract from academic success. Like sleep quality, other factors likely contribute to academic performance beyond internet addiction, hence the null hypothesis is rejected.

CONCLUSION

This study provides valuable insights into the impact of internet addiction on sleep quality and academic performance among residential and non-residential students. The lack of significant differences between the two groups suggests that living arrangements do not notably influence these variables. However, internet addiction was found to be a critical factor adversely affecting both sleep and academic outcomes, highlighting the need for targeted interventions to address this issue.

The observed relationships suggest that high levels of internet addiction contribute to poor sleep quality, which in turn negatively affects academic performance. These findings reinforce the importance of monitoring internet usage and promoting healthier sleep habits among students to enhance their academic success and overall well-being.

Implications

The findings have several implications for educators, parents, and policymakers. The significant relationships between internet addiction, sleep quality, and academic performance

underscore the need for interventions that address excessive internet use among students. Promoting awareness about the adverse effects of internet addiction and encouraging better sleep hygiene practices could improve academic outcomes and student well-being.

Given the significant predictive value of internet addiction on both sleep quality and academic performance, strategies such as digital detox programs, time management training, and counselling services could be beneficial. Further research is needed to explore additional factors influencing these relationships and to develop comprehensive intervention models tailored to the unique needs of residential and non-residential students.

These insights are valuable for designing targeted strategies to support students in managing their internet use, thereby enhancing their academic performance and overall quality of life.

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Conflict of Interest

The author declared no conflict of interest.

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