



A Study to Assess the Relationship Between Smartphone Usage and Academic Stress Among Adolescents

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Abstract

Introduction: Communication and information access have been transformed by smartphones. They offer chances for social contact, virtual classrooms, educational applications, and online learning. Teenagers' everyday activities, educational experiences, and lives have all been profoundly impacted by the widespread availability of smartphones. Due to affordability and internet accessibility, the number of teenagers who own smartphones has significantly increased in recent years.

Methodology: A quantitative descriptive correlational research approach was used to look at teenagers' smartphone use and academic stress. The survey included one hundred teenagers from specific urban and rural regions of Bihar. The participants were selected using a practical non-probability selection technique. Data was gathered using the Academic Stress Scale, the Smartphone Usage Scale, and a demographic questionnaire. Both descriptive and inferential statistics were used in the data analysis process.

Results: The findings showed that 12% of teenagers used smartphones minimally, 30% used them moderately, and 58% used them heavily. Regarding academic stress, 18% expressed low stress, 28% reported high stress, and 54% reported moderate stress. The Pearson correlation value of $r = 0.68$ showed a significant positive relationship between academic stress and smartphone use at $p < 0.001$.

Conclusion: According to the study's findings, teens who use smartphones excessively have higher levels of academic stress. Healthy smartphone usage habits and appropriate awareness campaigns may lessen academic stress and enhance academic performance.

Keywords: Smartphone Usage, Academic Stress, Adolescents, Technology Addiction, Mental Health, Education.

INTRODUCTION

Adolescence is a critical developmental stage marked by rapid physical, psychological, emotional, and social changes. During this stage, adolescents deal with increasing academic demands, form their personalities, and develop relationships with others. The advancement of digital technology has

fundamentally altered the lives of teenagers, and cellphones are currently among the most popular

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devices worldwide.¹

Smartphones have revolutionized communication and information access. They provide opportunities for online learning, instructional apps, virtual classrooms, and social interaction. The increasing availability of cellphones has had a significant impact on the lives, daily activities, and educational experiences of teenagers. The number of teenagers who own cellphones has dramatically increased in recent years due to their affordability and ease of access to the internet.²

Despite the many benefits of smartphones, over use has become a serious public health issue. Teenagers regularly use smartphones for instant messaging, gaming, social networking, entertainment, and streaming videos. Overuse of screens can affect academic performance, focus, physical activity, and sleep quality. Problematic smartphone use has been linked by researchers to stress, anxiety, sadness, and emotional disorders.³

The psychological discomfort brought on by academic expectations that beyond a person's capacity for adaptation is known as academic stress. Exams, assignments, peer competition, parental expectations, job concerns, and performance pressures can all lead to academic stress. While extreme stress can have detrimental effects on learning, motivation, and mental health, moderate stress levels may encourage pupils to perform better.⁴

Both opportunities and difficulties have been brought about by the incorporation of cellphones into educational settings.⁵ Although cellphones make it easier for students to access educational resources, excessive use might divert them from their academic work. Frequent disruptions from digital entertainment, online gaming, and social media notifications might impair focus and study efficiency, increasing academic stress.

According to research, teenagers use smartphones for a significant amount of the day. Even during study periods, many teenagers claim to check their smartphones several times an hour. When deadlines draw near, these actions may lead to procrastination, decreased productivity, and greater academic pressure.⁶

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Community-based research offers important insights into the psychological health and behavioral patterns of teenagers. Healthcare providers, schools, and parents can create initiatives to encourage responsible technology use and academic performance by having a better understanding of the connection between smartphone use and academic stress.⁹

The goal of the current study was to evaluate the connection between academic stress and smartphone use among teenagers living in particular Bihar communities.¹⁰

OBJECTIVES

1. To assess the level of smartphone usage among adolescents.
2. To assess the level of academic stress among adolescents.
3. To determine the relationship between smartphone usage and academic stress among adolescents.
4. To find the association between smartphone usage and selected demographic variables.
5. To find the association between academic stress and selected demographic variables.

HYPOTHESES

H₁: There will be a significant relationship between smartphone usage and academic stress among adolescents.

H₂: There will be a significant association between smartphone usage and selected demographic variables.

H₃: There will be a significant association between academic stress and selected demographic variables.

METHODOLOGY

Research Approach:

Quantitative research approach.

Research Design:

Descriptive correlational research design.

Setting:

Selected urban and rural communities of Bihar.

Population:

Adolescents residing in selected communities of Bihar.

Sample:

100 adolescents.

Sampling Technique:

Non-probability convenient sampling.

Inclusion Criteria:

Adolescents aged 13–19 years.
Adolescents willing to participate.
Adolescents available during data collection.

Exclusion Criteria:

Adolescents with diagnosed psychiatric disorders.
Adolescents unwilling to participate.

Variables

Independent Variable: Smartphone usage.

Dependent Variable: Academic stress.

Research Tool

Section A:

- Demographic Data
- Age
- Gender
- Educational level
- Family type
- Residence

RESULTS

Table 1: Distribution of Adolescents According to Smartphone Usage

Level of Smartphone Usage	Frequency (f)	Percentage (%)
Low	12	12%
Moderate	30	30%
High	58	58%
Total	100	100%

- Daily smartphone usage hours

Section B:

Smartphone Usage Scale
30 items with Likert scale scoring.

Scoring:

Low Usage: 0–40
Moderate Usage: 41–70
High Usage: 71–100

Section C:

Academic Stress Scale
30 items with Likert scale scoring.

Scoring:

Low Stress: 0–40
Moderate Stress: 41–70
High Stress: 71–100

Validity:

Validated by seven experts in nursing, psychology, psychiatry, and education.

Reliability:

Cronbach's Alpha = 0.88.

Pilot Study:

Conducted among 10 adolescents outside the main study sample.

Data Collection Procedure

Local authorities and community leaders granted formal authorization. The goal of the study was explained to the participants. Assent and written informed consent were acquired. Structured questionnaires were used to gather data. Anonymity and confidentiality were upheld during the entire investigation.¹¹

Ethical Considerations

- Written informed consent obtained.
- Confidentiality maintained.
- Voluntary participation ensured.

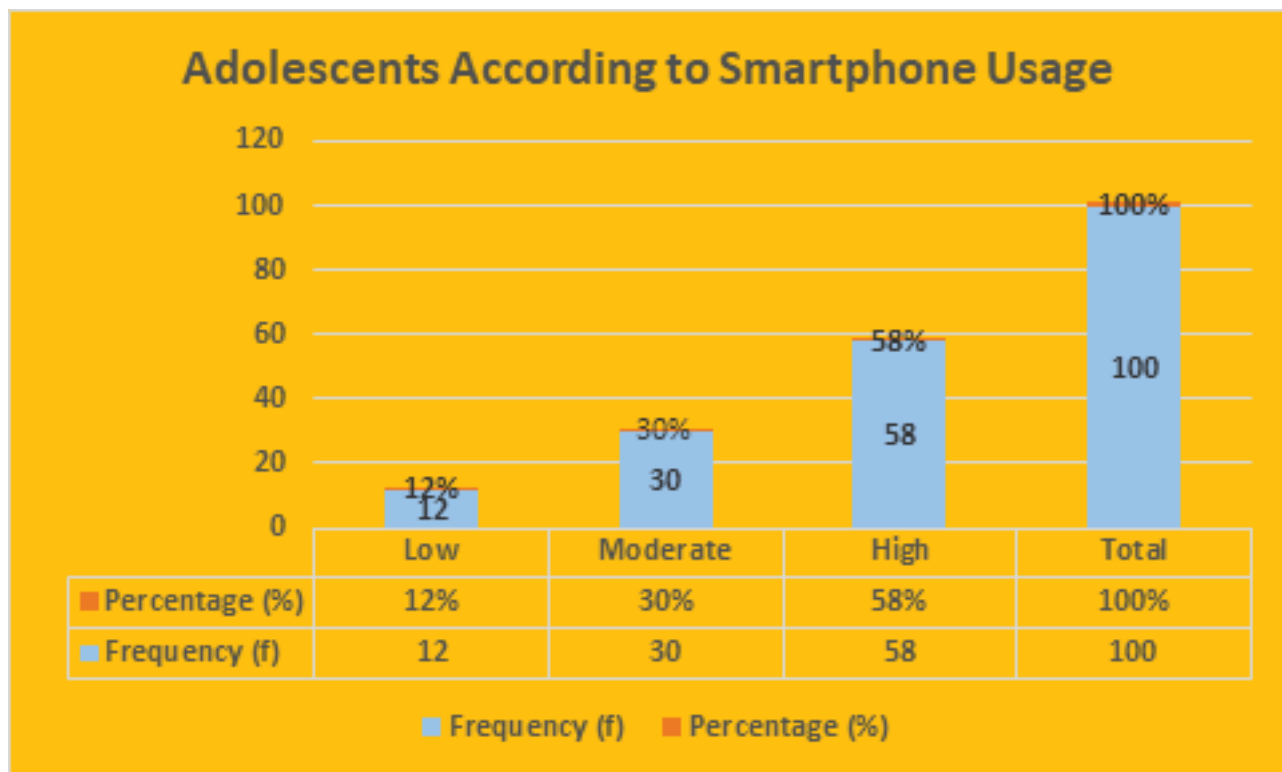


Figure 01: Adolescents According to Smartphone Usage

Table 2: Distribution of Adolescents According to Academic Stress

Level of Academic Stress	Frequency (f)	Percentage (%)
Low	18	18%
Moderate	54	54%
High	28	28%
Total	100	100%

Table 3: Correlation Between Smartphone Usage and Academic Stress

Variable	Mean	SD	Correlation (r)
Smartphone Usage	74.25	12.14	0.68*
Academic Stress	66.84	11.38	—

Significant at $p < 0.001$

MAJOR FINDINGS

- Majority (58%) of adolescents demonstrated high smartphone usage.
- Majority (54%) reported moderate academic stress.
- Significant positive correlation was observed between smartphone usage and academic stress ($r=0.68$).

- Increased smartphone usage was associated with higher academic stress levels.

DISCUSSION

The majority of teenagers showed excessive smartphone usage, according to the current study. These results are in line with earlier research showing a rise in smartphone dependence among teenagers as a result of social, recreational, and educational pursuits.^{12,13}

Additionally, the majority of participants in the study reported moderate levels of academic stress. Teenagers' stress levels are greatly increased by academic expectations, tests, competitiveness, and worries about their future careers.^{14,15}

Academic stress and smartphone use were found to be significantly positively correlated. increased smartphone usage was associated with increased levels of academic stress among adolescents. Overuse of smartphones can raise academic burden by interfering with study plans, focus, and sleep quality.

The results corroborate previous research showing that problematic smartphone use may negatively impact academic performance and psychological well-being. Promoting balanced smartphone use through educational initiatives may lessen academic stress and enhance general wellbeing.

CONCLUSION

The study found a strong correlation between teenage smartphone use and academic stress. Higher levels of academic stress were linked to high smartphone usage. Teenagers may find it easier to strike a balance between their use of technology and their academic obligations if they participate in awareness campaigns that emphasize time management, stress reduction techniques, and healthy digital habits.^{16,17}

RECOMMENDATIONS

1. Comparable studies may employ larger sample sizes.
2. Studies contrasting adolescents in rural and urban regions could be conducted.
3. Experimental study may be conducted to evaluate therapies intended to reduce smartphone addiction.
4. Awareness campaigns about ethical smartphone use should be conducted by communities and educational institutions.
5. Longitudinal studies may be conducted to assess the long-term effects of smartphone use on academic performance and mental health.

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Conflict of Interest: None

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