

Academic Stress and Smartphone Addiction Among High School Students in Mizoram

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Abstract: The increasing integration of smartphones into adolescents' daily lives has raised concerns regarding their impact on mental health and academic performance. This study investigates the level of academic stress and smartphone addiction among high school students in Khawzawl district, Mizoram, and explores the relationship between the two variables. A descriptive survey design was employed, with standardized scales administered to a purposive sample of high school students (Classes IX and X). Data were analyzed using descriptive and inferential statistics. The findings revealed that most students experienced moderate to high levels of academic stress, alongside notable levels of smartphone addiction. A significant positive correlation was found between academic stress and smartphone addiction, suggesting that higher stress levels are associated with increased dependency on smartphones. The results highlight the need for school-based interventions, digital literacy programs, and parental guidance to address both academic stress and problematic smartphone use among adolescents.

Keywords: Academic stress, smartphone addiction, high school students, Mizoram, adolescents

1. Introduction

Adolescence represents a critical period of psychological, academic, and social development. In recent years, the dual challenges of academic stress and smartphone addiction have emerged as significant issues affecting the well-being and performance of students. Academic stress is defined as the pressure and anxiety experienced by students in relation to examinations, assignments, parental expectations, and competition (Chellamuthu & Subramanian, 2017). It has been associated with depression, burnout, and decreased academic performance (Tus, 2020).

At the same time, smartphones, while offering educational and social benefits, have increasingly become a source of behavioral addiction among adolescents. Excessive use has been linked to anxiety, poor sleep, reduced physical activity, and lower academic performance (Samaha & Hawi, 2016). The phenomenon of "nomophobia" (fear of being without one's phone) further illustrates the dependency students develop (Emanuel, 2015).

In Mizoram, where education is highly valued, students in districts such as Khawzawl face mounting academic pressures while simultaneously engaging in widespread smartphone use. The concern is that students may resort to smartphones as a coping mechanism for stress, leading to a cycle of dependency that exacerbates academic challenges. Earlier studies indicate that smartphone addiction and academic stress share a reciprocal relationship, with stress driving excessive smartphone use and addiction reinforcing stress (Wang et al., 2020).

This study aims to investigate the levels of academic stress and smartphone addiction among high school students in Khawzawl district, Mizoram, and to examine the correlation between these two critical variables. The findings will provide insights for educators, policymakers, and parents to design interventions that foster healthy study habits and responsible digital behavior.



2. Review of Literature

Samaha and Hawi (2016) examined a study on the connections between stress, academic achievement, smartphone addiction, and life satisfaction. The findings indicated that whereas perceived stress was inversely correlated with life happiness, smartphone addiction risk was favorably correlated with stress. Furthermore, there was a negative correlation between the likelihood of smartphone addiction and academic performance, but a favorable correlation between academic success and life satisfaction.

Kim and Shin (2016) did a study on the effects of academic stress in middle school students on smartphone addiction: moderating effect of self-esteem and self-control. The finding shows that there were notable differences in smartphone addiction by gender, duration of use, and average monthly usage. The results of the hierarchical regression analyses showed a strong positive correlation between smartphone addiction and academic stress. However, there was a negative correlation between smartphone addiction and self-esteem and self-control. The association between smartphone addiction and academic stress seemed to be moderated by self-control.

Soni et al., (2017) studied adolescents' prevalence of smartphone addiction, poor sleep, and related behavioral issues. The results indicated that low users made up 53.62% of the total (n=196). According to the Smart Phone Addiction Scale, 33.3% of people were heavy smartphone users. Overuse of smartphones was associated with high DASS-21 and Global PSQI ratings for stress, anxiety, and depression. As smartphones become more and more popular, young people spend a lot of time on them, which leads to the development of addictive tendencies. According to this study, kids who use smartphones excessively are not only addicted, but they are also experiencing serious sleep and behavioral issues.

Kumcagiz (2019) studied on the adolescents' quality of life as a predictor of smartphone addiction risk. According to the study's findings, among Turkish high school students, smartphone addiction was negatively connected with aspects of both physical and mental health as well as general quality of life. Therefore, in order to successfully reduce the danger of smartphone addiction among high school kids, school counselors should assist their clients in improving their quality of life.

Nandagaon and Raddi (2020) examined a study on the adolescent students' suicidal thoughts and depression as a result of academic stress. According to the findings, 273 of the samples reported having a high level of academic stress, and the sample mean on the overall academic stress score was 49.38. According to the results of the depression assessment, 381 students, 625 students, and 198 students had mild, moderate, and severe depression, respectively. of the n=1204 students, 1021 students said "no," and 183 students said "yes" when asked if they had suicidal thoughts. In conclusion, teenage depression and suicidal thoughts are caused by academic stress in students, and recognizing and managing this stress can help teenagers avoid challenging circumstances.

Wang et al., (2020) did a study on the academic stress and smartphone dependence among Chinese adolescents: a moderated mediation model. The findings demonstrated that psychological anguish was positively correlated with academic stress, which may further contribute to extreme smartphone dependence. The association between academic stress and smartphone dependency was partially mediated by psychological suffering. Academic resilience mitigated psychological distress's mediation role between academic stress and smartphone dependency. In particular, academic resilience reduced the psychological distress-mediated indirect connection between academic stress and smartphone dependency. According to our research, high levels of academic stress are associated with a higher risk of smartphone dependence, and teenagers may use their phones excessively as a coping mechanism.

Pillai et al., (2023) conducted a study on academic stress and coping in high school adolescents. The study found that the majority of high school students experience low to moderate levels of stress. Female students were generally more stressed than male students. Poor performance in recent exams was also linked to increased stress levels. There was a noticeable positive correlation between factors such as parental and the increasing age of adolescents. Many students employed various coping mechanisms to manage academic stress, with a preference for active coping strategies, which were used more frequently than passive ones. Understanding these contributing factors can guide improvements in the educational curriculum to help alleviate student stress.

Zhang and Zeng (2024) examined the effect of college students' smartphone addiction on academic achievement: the mediating role of academic anxiety and moderating role of sense of academic control. The purpose of this study is to investigate the mechanical relationship between academic anxiety and academic control and how smartphone addiction affects college students' academic accomplishment. The findings of this research should help

inform future research and instructional strategies. According to this study, academic achievement is inversely correlated with smartphone addiction among college students.

Together, these studies indicate a complex interplay between academic stress and smartphone addiction, suggesting that interventions must address both psychological well-being and digital habits.

3. Methodology

Method of Study

The present investigation followed a descriptive survey method, which was deemed suitable as the purpose of the study was to assess the levels of academic stress and smartphone addiction among high school students and to examine the relationship between the two variables without manipulating any conditions.

Population and Sample

The population of the study consisted of all high school students studying in Classes IX and X in Khawzawl district, Mizoram. A total of 150 students participated in the study. The study employed purposive sampling technique. From the selected samples, there were 80 female respondents and 70 male respondents. The details of the sample are presented under table 1

Table 1
Details of sample selected

Category		Out of 70 Male Respondents	Out of 80 Female Respondents	Total
Qualification	Class X	29	36	65
	Class IX	41	44	85

As shown in table 1, the investigator has selected a total of 150 samples. Out of the 150 samples selected, 70 respondents were male, and 80 respondents were female. Based on the educational qualifications of the respondents, 65 respondents were class X (29 male and 41 female), and 85 respondents were class IX (41 male and 44 female).

Tools Used for Data Collection:

The following tools were employed for the present study:

- 1) Academic Stress Scale developed by Supid Ghoshal and Debasri Banerjee in 2021.
- 2) Smartphone Addiction Scale which was developed by Dr. Vijayshri and Dr. Masaud Ansari in 2020.

Data Collection

Prior to data collection, permission was obtained from the concerned school authorities. The objectives of the study were explained to the students, and informed consent was obtained. The researcher assured the participants that their responses would remain confidential and would be used only for academic purposes. The tools were administered collectively in the classroom setting during school hours, and the researcher provided clear instructions and clarifications when required.

Statistical Methods for Data Analysis

After scoring the academic stress scale and smartphone addiction scale responses, the data obtained from the 150 high school students were scored as per the standard scoring method provided for each test. Each student was allotted a serial number according to the variables under study. The test scores were then entered into the tabulation sheet and were subject to statistical treatment by employing the following statistical techniques for the analysis.

Descriptive Statistical Measure:

Measures of Central Tendency and Deviation were used to find out the nature of score distribution and the classification of respondents in different categories.

Test of Significance for Mean Difference:

The significant differences between the mean score of the high school students with reference to gender and their type of management was tested by using the 't' test and correlation.

Analysis and Interpretation

The findings for objectives have been presented as follows:-

Objective 1: Level of academic stress among high school students in Khawzawl district.

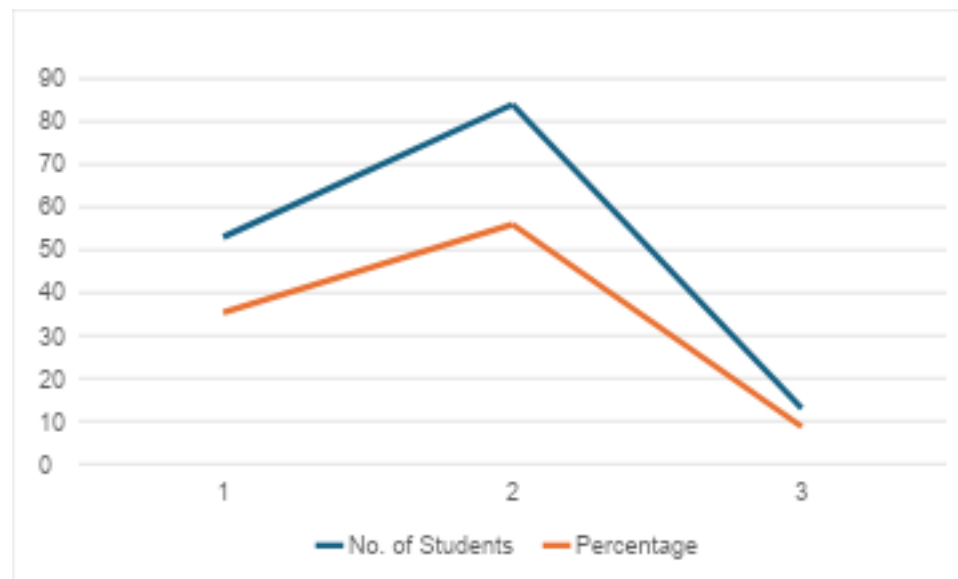
The scores obtained from high school students in Khawzawl district using the "Academic Stress Scale" were evaluated and tabulated. Based on their responses, high school students were divided into three levels, namely "Low Academic Stress," "Moderate Academic Stress," and "High Academic Stress," in accordance with the scale's established norms. Accordingly, respondents scoring 53 and below were considered to have Low Academic Stress, those scoring 54 to 67 were considered to have Moderate Academic Stress, and those scoring 68 and above were considered to have High Academic Stress. Table no. 1 shows the level of academic stress among high school students.

Table No. 2
Level of Academic Stress among high school students in Khawzawl district

Level	Range of Score	No. of Students	Percentage
Low Academic Stress	53 & below	53	35.33
Moderate Academic Stress	54 – 67	84	56
High Academic Stress	68 & above	13	8.67

Figure 1

Figure shows the level of academic stress among high school students in Khawzawl district.



As shown in table no. 2 and figure 1, most of the high school students 84 (56%) in Khawzawl district had moderate academic stress, 53 (35.33%) of them had low level of academic stress and 13 (8.67%) had high level of academic stress.

Objective 2: Level of smartphone addiction among high school students in Khawzawl district.

The "Smartphone Addiction Scale" results from high school students in the Khawzawl district were assessed and tallied. According to the established norms of the scale, high school students were categorized into seven levels based on their responses: "Very High Level of Addiction," "High Level of Addiction," "Above Average Level of Addiction," "Average Level of Addiction," "Below Average Level of Addiction," "Low Level of Addiction," and "Very Low Level of Addiction." As a result, those who scored 88 or higher were classified as having a Very High Level of Addiction, those who scored 81–87 as having a High Level of Addiction, and those who scored 66–80 as

having an Above Average Level of Addiction. Students with scores between 51 and 65 were classified as having an average level of addiction, those with scores between 40 and 50 as having a below-average level of addiction, those with scores between 29 and 39 as having a low level of addiction, and those with scores of 28 and lower as having a very low level of addiction. The degree of smartphone addiction among Khawzawl district high school students is displayed in Table No. 2.

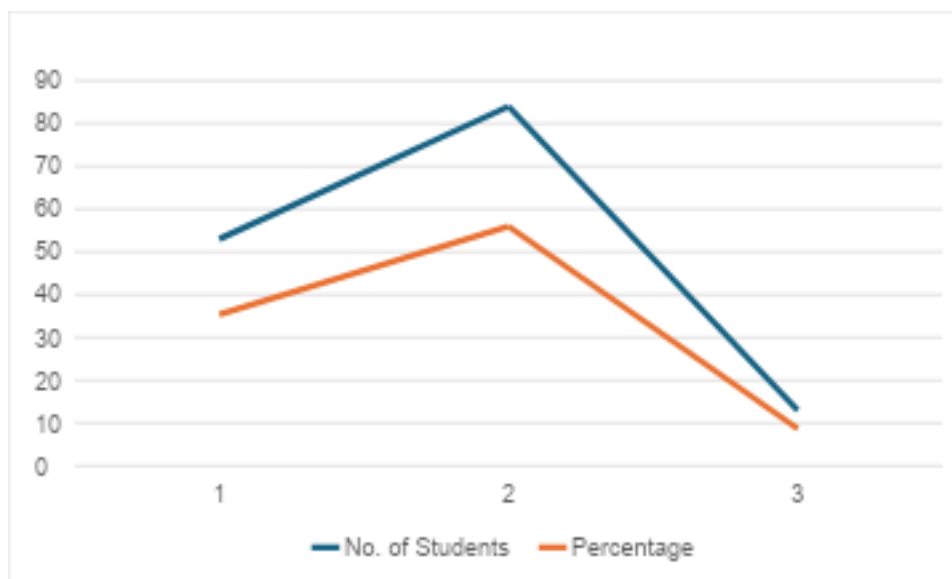
Table No. 2

Level of Smartphone Addiction among high school students in Khawzawl district

Level	Range of Score	No. of Students	Percentage
Very High Level of Addiction	88 and above	2	1.33
High Level of Addiction	81 to 87	5	3.33
Above Average Level of Addiction	66 to 80	49	32.67
Average Level of Addiction	51 to 65	71	47.33
Below Average Level of Addiction	40 to 50	19	12.67
Low Level of Addiction	29 to 39	4	2.67
Very Low Level of Addiction	28 and below	NIL	NIL

Figure 2

Figure shows the level of smartphone addiction among high school students in Khawzawl district



As indicated in Table No. 2 and figure 2, the majority of high school students in the Khawzawl district—71 (47.33%)—had average levels of smartphone addiction. Out of 150 students of high school in Khawzawl district, 49 (32.67%) had above-average levels of smartphone addiction, 19 (12.67%) students had below-average levels of smartphone addiction, 5 (3.33%) had high levels of smartphone addiction, 4 (2.67%) had low levels of smartphone addiction, and only 2 (1.33%) had very high levels of smartphone addiction. Additionally, none of the students had very low levels of smartphone addiction.

Objective 3: Relationship between academic stress and smartphone addiction among high school students in Khawzawl district.

The relationship between academic stress and smartphone addiction among high school students in Khawzawl district may be presented as follows in Table No.3.

Table No. 3
Relationship between Academic Stress and Smartphone Addiction among High School Students in Khawzawl district

(N=300)

Categories	Academic Stress	Smartphone Addiction
Academic Stress	1	-0.015
Smartphone Addiction	-0.015	1

Not significant at 0.05 level

Table 3 presents the correlation between academic stress and smartphone addiction among high school students in Khawzawl district. The computed correlation coefficient ($r = -0.015$) was negative and negligible but not statistically significant at the 0.05 level, based on a sample of 150 students. Given the nature of relationship, there was no significant relationship between academic stress and smartphone addiction among high school students in Khawzawl district.

Major Findings and Discussion

1) Academic stress among high school students in Khawzawl district.

- a. Most of the high school students 84 (56%) in Khawzawl district had moderate academic stress.
- b. 53 (35.33%) of them had low level of academic stress.
- c. Out of the 150 high school students in the Khawzawl district, 13 (8.67%) had high levels of academic stress.

The findings revealed that majority of the high school students in Khawzawl district had moderate academic stress.

Discussion: Similar findings have been obtained by Nandagaon and Raddi (2020), where the level of academic stress among the students was at a moderate level.

There may be several reasons why most of the high school students in Khawzawl district had moderate levels of academic stress. Firstly, many students may have developed time management strategies to balance studies, extracurricular activities, and rest that can reduce anxiety and make students feel more confident. Also, the students may be connected with peers facing difficulties that can offer emotional relief and foster a sense of unity. The result also shows that a large number of students have low academic stress and only a few students have high academic stress. The reason why a large number of students have low academic stress can be that students may benefit from supportive environment, while students who have high academic stress may have poor performance in recent exams that linked to increase their stress levels (Pillai et al., 2023).

2) Smartphone addiction among high school students in Khawzawl district.

- a. The majority of high school students in the Khawzawl district—71 (47.33%)—had average levels of smartphone addiction.
- b. Out of 150 high school students in Khawzawl district, 49 (32.67%) had above-average levels of smartphone addiction.
- c. 19 (12.67%) students had below-average levels of smartphone addiction.

- d. While 5 (3.33%) students had high levels of smartphone addiction and 4 (2.67%) of the students had low levels of smartphone addiction.
- e. Only 2 (1.33%) of the students had very high levels of smartphone addiction.
- f. The overall finding shows that the majority of the students had average level of smartphone addiction, and it was also found that none of them were found to possess very low level of smartphone addiction.

The findings indicated that the majority of students had average level of smartphone addiction.

Discussion: The findings of the study showed that majority of the high school students in Khawzawl district have average level of smartphone addiction. The reason can be that students recognize the potential negative consequences of excessive smartphone use such as poor sleep and reduced attention which may lead them to moderate their usage. Students who use smartphones excessively are not only addicted, but they are also experiencing serious sleep and behavioral issues (Soni et al., 2017). There are also a number of students who have an above average level of addiction, and it was also found that none of the students are in a very low level of addiction. The main factors can be that students may have lack of adequate knowledge and supervision regarding appropriate smartphone use; they may find it difficult to manage their screen time effectively. Therefore, in order to successfully reduce the danger of smartphone addiction among high school students, school counselors should assist their clients in improving their quality of life (Kumcagiz, 2019).

3) Relationship between Academic Stress and Smartphone Addiction among High School Students in Khawzawl District

- a. It was found that there was no significant relationship between academic stress and smartphone addiction among high school students in Khawzawl district.
- b. The data indicated that the levels of academic stress and smartphone addiction varied independently, suggesting that high stress levels did not necessarily correspond with higher smartphone addiction.

Discussion:

The findings of the study revealed that there was no significant relationship between academic stress and smartphone addiction among high school students in Khawzawl district. This suggests that the level of academic stress experienced by students does not directly influence their tendency to become addicted to smartphones. In other words, even students with high levels of stress may not necessarily overuse smartphones, and those with lower stress may still develop smartphone addiction due to other factors such as peer influence, entertainment, or habitual use.

This result contrasts with earlier studies such as Samaha and Hawi (2016) and Kim and Shin (2016), who reported a significant positive association between stress and smartphone addiction. Similarly, Wang et al. (2020) highlighted stress as a contributing factor to smartphone dependence, and Zhang and Zeng (2024) noted that smartphone addiction is often linked with academic anxiety. The lack of a significant relationship in the present study may be attributed to contextual differences. Students in Khawzawl district may use smartphones primarily for communication, socialization, or leisure, rather than as a coping strategy for academic stress.

The finding indicates that smartphone addiction among adolescents is likely influenced by multiple factors such as accessibility of devices, social media trends, peer pressure, and recreational interests rather than academic stress alone. Thus, while stress remains a concern in the academic context, its direct link with smartphone addiction could not be established in this study.

4. Conclusion

The present study set out to examine academic stress, smartphone addiction, and the relationship between the two among high school students in Khawzawl district, Mizoram.

With regard to level of academic stress, the findings revealed that most high school students experienced moderate to high levels of academic stress. This highlights the reality that adolescents in Khawzawl district face multiple academic pressures such as examination demands, parental expectations, and workload. These stressors, while common in adolescent academic life, may affect their emotional well-being and academic performance if left unaddressed. The findings emphasize the need for schools to adopt stress management interventions and provide emotional support to students.

In relation to the level of smartphone addiction, the study found that students exhibited moderate levels of smartphone addiction. Smartphones have become integral to the daily lives of adolescents, and while they provide educational benefits, excessive and unregulated use has the potential to distract from studies, reduce concentration, and interfere with sleep and health. The moderate level of addiction identified in this study suggests that students are at a vulnerable stage where preventive measures, awareness, and parental monitoring could play an important role in curbing potential overuse.

Concerning the relationship between academic stress and smartphone addiction, the study found that there was no significant relationship between academic stress and smartphone addiction. This indicates that the two variables operated independently among the sampled students. In contrast to studies that identified stress as a predictor of smartphone overuse, the present study suggests that students in Khawzawl district may not necessarily use smartphones as a coping mechanism for academic stress. Instead, their smartphone use could be shaped by other factors such as socialization, entertainment, and peer influence. This finding is important as it challenges the assumption that higher stress directly contributes to smartphone addiction and underlines the need to consider multiple influences when studying adolescents' technology use.

Taken together, these findings provide a nuanced understanding of the challenges faced by high school students in Khawzawl district. While academic stress and smartphone addiction are evident concerns, their lack of a direct relationship indicates that interventions must address them separately. Schools, parents, and policymakers must create supportive environments to help students manage academic pressure effectively, while simultaneously promoting responsible smartphone use through awareness, guidance, and structured digital habits.

Educational Implications

The findings of the study carry several educational implications for schools, teachers, parents, and policymakers. The presence of moderate to high levels of academic stress among students suggests the need for schools to foster a supportive and learner-friendly environment. Teachers should not only focus on academic instruction but also address students' emotional well-being, ensuring that learning does not become a source of undue pressure. Life skills education and stress management strategies should be incorporated into the curriculum to equip students with coping mechanisms such as problem-solving, time management, and relaxation techniques.

The issue of smartphone addiction points toward the importance of promoting digital literacy among adolescents. Educators should emphasize the positive and educational use of smartphones while discouraging excessive dependence on them for non-academic purposes. Since smartphones have become integral to students' lives, schools should guide them toward productive use of technology while also encouraging balance through extracurricular and recreational activities.

The absence of a significant relationship between academic stress and smartphone addiction highlights that these challenges must be understood and addressed independently. Academic stress should be managed through academic and emotional support, while smartphone use requires separate interventions focusing on awareness, guidance, and responsible digital behavior. This indicates that comprehensive adolescent education must simultaneously address both mental well-being and technology use in order to promote holistic development.

Recommendations

Based on the findings of the study, the following recommendations are suggested:

1) For Schools and Teachers:

- Organize workshops, counseling sessions, and peer-support programs to help students deal with stress in healthy ways.
- Integrate life skills and stress management modules into the curriculum.
- Establish school-level guidelines for responsible smartphone use, ensuring that devices support learning rather than hinder it.

2) For Parents:

- Provide emotional support and maintain realistic expectations regarding academic performance.

- Monitor and regulate children's smartphone usage at home, encouraging balance between academic work, recreation, and rest.
- Engage students in constructive activities that foster creativity, physical health, and social interaction.

3) For Policymakers and Educational Authorities:

- Introduce adolescent well-being programs that address both academic resilience and digital literacy.
- Provide training for teachers to identify and manage stress among students effectively.
- Develop policies that balance the benefits of technology with safeguards against excessive smartphone use.

4) For Future Research:

- Conduct further studies to explore other factors influencing smartphone addiction, such as peer influence, family environment, and personality traits.
- Examine intervention strategies that separately target academic stress reduction and digital responsibility.
- Extend the study to other districts and states to compare findings and design broader policy measures.

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