

Influence Of Smartphone Addiction on Academic Achievement Among Senior Secondary School Students in Rohtak District

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Abstract: This analytical study examines the influence of smartphone addiction on academic achievement among senior secondary school students in Rohtak district. The study uses an analytical draft dataset of 520 students from Classes XI and XII. Smartphone addiction is examined in relation to academic achievement, study habits, mental-health risk and behavioural problems. Results show that students with high smartphone addiction have lower academic achievement than students in low and moderate addiction groups. Smartphone addiction is negatively correlated with study habits and academic achievement, while study habit is positively correlated with academic achievement. Regression analysis shows that smartphone addiction remains a significant negative predictor of academic achievement even after mental-health risk, behavioural problems, study habit and demographic variables are included. The findings suggest that academic decline is not caused only by time spent on phones; it also operates through distraction, poor sleep, emotional strain and weak study discipline. The paper recommends digital self-regulation, parent-teacher monitoring, structured study schedules and counselling-based support.

Keywords: smartphone addiction, academic achievement, study habits, senior secondary students, digital distraction, Rohtak district

INTRODUCTION

Academic achievement is a major concern for senior secondary students because Classes XI and XII are linked with board examinations, university admissions, professional choices and competitive preparation. Smartphones can support academic achievement when used for online classes, reference videos, educational applications and communication with teachers. However, when use becomes addictive, it can reduce study time, weaken concentration and disturb sleep. Therefore, the influence of smartphone addiction on academic achievement must be studied carefully.

The academic impact of smartphone addiction is not limited to hours lost. A student may sit with books but keep checking notifications, messages or short videos. This breaks attention and reduces deep learning. Late-night use may reduce sleep and cause next-day tiredness. Social comparison and online pressure may create stress. These pathways show why smartphone addiction can affect academic achievement indirectly through mental health, behavioural problems and study habits.

Previous studies have shown relationships among smartphone addiction, stress and academic performance. Lepp et al. (2014) found that cell-phone use is related to academic performance and anxiety among college students. Samaha and Hawi (2016) reported relationships among smartphone addiction, stress, academic performance and satisfaction with life. These findings support school-level analysis because habits formed during senior secondary years may shape later academic behaviour.

The present paper focuses on Rohtak district and presents a complete analytical model. The statistical analysis includes group comparison, correlation and regression. The paper aims to provide a ready empirical manuscript structure that can be verified with actual field data from senior secondary students.

REVIEW OF RELATED LITERATURE

Kwon et al. (2013) established a strong measurement base for adolescent smartphone addiction. Their scale logic is relevant for academic research because daily-life disturbance and loss of control directly relate to study habits. A student with high addiction may know that study is important but may still fail to control checking behaviour.

Lepp et al. (2014) found links among cell-phone use, academic performance, anxiety and life satisfaction. Samaha and Hawi (2016) also reported that smartphone addiction is related to stress and academic performance. These studies suggest that smartphone addiction affects achievement through psychological and behavioural pathways rather than only through technology exposure.

Sohn et al. (2019) reported links between problematic smartphone use and mental-health outcomes. Mental health can influence academic achievement by affecting concentration, motivation and memory. Demirci et al. (2015) highlighted sleep quality as an important factor, and sleep is well connected with academic readiness. Thus, academic achievement must be examined along with mental-health and behaviour variables.

In Indian settings, Davey and Davey (2014) emphasised the growing concern of smartphone addiction among adolescents. Rohtak district offers a useful context because senior secondary students experience pressure from board examinations and competitive coaching while also using smartphones for both learning and entertainment.

OBJECTIVES

- To study smartphone addiction and academic achievement among senior secondary school students in Rohtak district.
- To compare academic achievement across low, moderate and high smartphone-addiction groups.
- To examine the relationship between smartphone addiction, study habit and academic achievement.
- To assess whether smartphone addiction predicts academic achievement after controlling mental-health risk, behavioural problems and demographic variables.
- To suggest academic-support strategies for students with high smartphone-addiction risk.

HYPOTHESES

- H01: There is no significant difference in academic achievement among low, moderate and high smartphone-addiction groups.
- H02: Smartphone addiction is not significantly related to academic achievement and study habit.
- H03: Smartphone addiction does not significantly predict academic achievement after control variables are included.

METHODOLOGY

The paper follows a descriptive survey and analytical design. The analytical draft dataset consists of 520 senior secondary students in Rohtak district. Academic achievement is represented through recent examination percentage. Study habit is represented through regularity, concentration, homework completion and planned study routine as mentioned in Table 1. Statistical analysis includes descriptive statistics, ANOVA, Pearson correlation and multiple regression.

Table 1. Operational definition and measurement plan

Variable	Operational meaning	Measurement logic	Role in analysis
Smartphone addiction	Excessive and uncontrolled use that disturbs daily life	Composite score from 10-60	Independent variable

Academic achievement	Performance in recent examination	Percentage score or equivalent academic record	Dependent variable
Study habit	Regular study routine, concentration and homework completion	Composite score; higher score means better study habit	Mediator/support variable
Mental-health risk	Anxiety, stress, depression and sleep disturbance	Composite score	Control pathway variable
Behavioural problem	Attention, aggression, withdrawal and impulsivity	Composite score	Control pathway variable

RESULTS & DISCUSSION

Table 2 shows a clear decline in academic achievement as smartphone-addiction level increases. The low-addiction group has the highest mean academic achievement, while the high-addiction group has the lowest mean achievement. This pattern suggests that uncontrolled smartphone use may interfere with the habits required for successful senior secondary study. The result is especially important because senior secondary students prepare for board examinations and future admissions.

Table 2. Academic achievement by smartphone-addiction group

Addiction group	N	Mean academic achievement	SD	Standard error
Low	115	85.66	7.17	0.668
Moderate	285	76.85	7.81	0.463
High	120	68.11	6.92	0.631

Table 3. ANOVA for academic achievement across addiction groups

Source	Df	F	p value	Decision
Between groups	2	161.91	0.000	Reject H01
Within groups	517			
Total	519			

The ANOVA result in Table 3 is statistically significant, so the null hypothesis of no difference among groups is rejected. The group comparison shows that academic performance is not independent of smartphone-addiction level. Students with high addiction may lose time, but more importantly, they may lose sustained attention. Academic achievement depends on deep reading, revision, memory and regular practice, all of which suffer when attention is repeatedly interrupted.

Table 4. Correlation of academic achievement with major variables

Variable	r with academic achievement	p value	Direction
SmartphoneAddiction	-0.676	0.000	Negative
StudyHabit	0.603	0.000	Positive
MentalHealthRisk	-0.572	0.000	Negative
BehavioralProblem	-0.525	0.000	Negative

Table 4 shows that smartphone addiction has a negative correlation with academic achievement. Study habit has a positive correlation with academic achievement. Mental-health risk and behavioural problems have negative relationships with achievement. This pattern supports a pathway model: smartphone addiction affects achievement partly through poor study habits, emotional strain and behavioural difficulty. Thus, the academic effect is multidimensional.

Table 5. Multiple regression predicting academic achievement

Predictor	B	SE	t	p
const	82.68	3.94	21.00	0.000
SmartphoneAddiction	-0.494	0.086	-5.73	0.000
StudyHabit	0.268	0.041	6.51	0.000
MentalHealthRisk	-0.126	0.100	-1.26	0.208
BehavioralProblem	-0.043	0.098	-0.443	0.658
Gender_Male	-0.377	0.602	-0.626	0.531
School_Private	0.234	0.596	0.392	0.695
Locale_Urban	0.127	0.595	0.214	0.831
Stream_Commerce	0.124	0.781	0.158	0.874
Stream_Science	1.95	0.684	2.84	0.005
Class_XII	-0.819	0.594	-1.38	0.169
Model R-squared	0.509			
Adjusted R-squared	0.500			

The regression results in Table 5 show that smartphone addiction remains a significant negative predictor of academic achievement even after study habit, mental-health risk, behavioural problems and demographic variables are included. Study habit has a positive coefficient, confirming that disciplined study routines protect achievement. This result suggests that schools should focus not only on reducing phone use but also on rebuilding study habits.

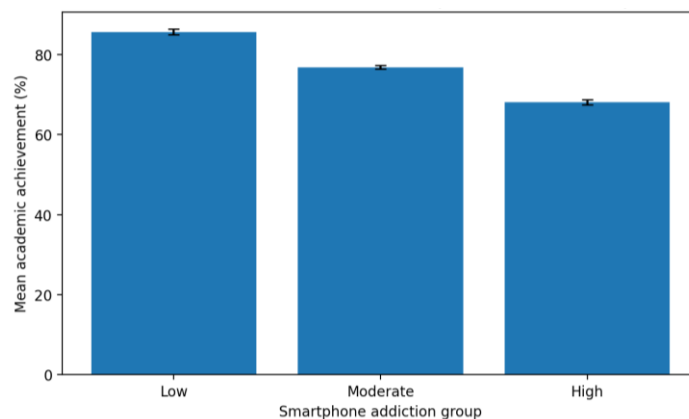


Figure 1. Mean academic achievement across low, moderate and high smartphone-addiction groups.

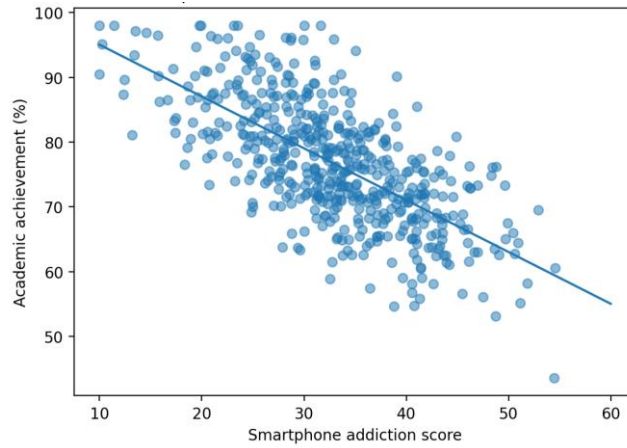


Figure 2. Scatter plot between smartphone addiction and academic achievement.

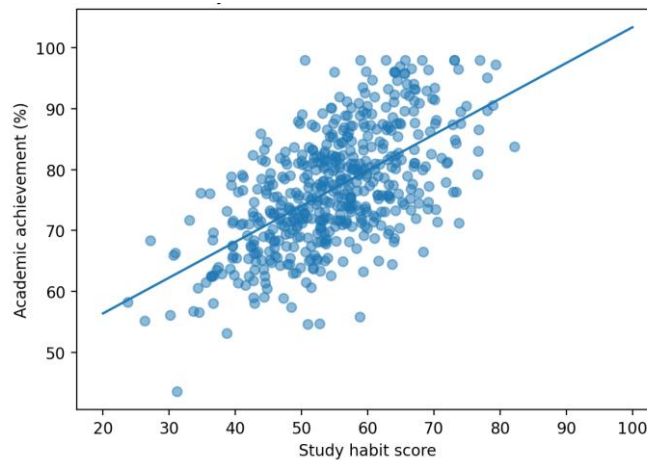


Figure 3. Scatter plot relationship between study habit and academic achievement.

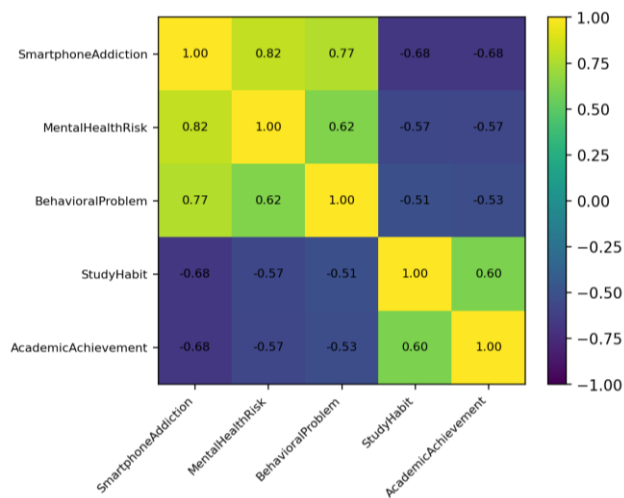
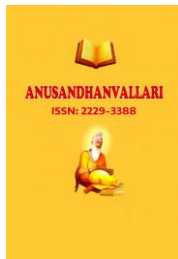


Figure 4. Correlation pattern among addiction, mental health, behaviour, study habit and academic achievement.



Figures 1 and 2 visually show the negative relationship between addiction and achievement. Figure 3 shows that better study habit is associated with higher academic achievement. Figure 4 shows that academic achievement is connected with psychological and behavioural variables. These visuals make the analysis useful for teachers, parents and school administrators.

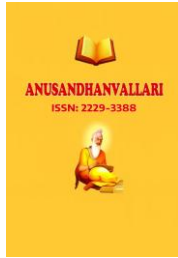
The findings of the study show that smartphone addiction has a negative influence on the academic achievement of senior secondary school students. Students with high smartphone addiction show lower academic performance as compared to students with moderate or low smartphone addiction. Excessive smartphone use reduces study time, weakens concentration, and creates frequent distraction during learning. The analysis also indicates that smartphone addiction is negatively related to study habits and academic achievement. Students who spend more time on smartphones often show irregular study routines, poor homework completion, late-night mobile use, and less interest in academic tasks. On the other hand, study habit is positively related to academic achievement and works as a protective factor. Students with regular study schedules, better time management, revision habits, and classroom attention are able to reduce the negative effect of smartphone use. Mental-health risk and behavioural problems are also negatively related to academic performance. Stress, anxiety, irritability, sleep disturbance, aggression, and poor self-control reduce students' academic engagement. The academic effect of smartphone addiction is both direct and indirect. It directly affects achievement by reducing learning time and attention, and indirectly affects achievement through distraction, disturbed sleep, stress, weak discipline, and poor study habits. Thus, controlled smartphone use and healthy study discipline are necessary for better academic outcomes.

CONCLUSION

The study concludes that smartphone addiction negatively influences academic achievement among senior secondary school students in Rohtak district. The effect is not limited to loss of study time. It also includes distraction, late-night use, emotional strain, attention problems and poor study habits. Schools should encourage phone-free study periods, guided use of educational applications, digital self-monitoring diaries, parent-teacher review and counselling for high-risk students. Teachers should help students develop realistic study schedules and short revision targets. Parents should create consistent rules for night-time phone use and should not depend only on punishment. The main educational message is that digital discipline must be linked with academic support and emotional guidance.

REFERENCES

1. Davey, S., & Davey, A. (2014). Assessment of smartphone addiction in Indian adolescents: A mixed method study by systematic-review and meta-analysis approach. *International Journal of Preventive Medicine*, 5(12), 1500-1511.
2. Demirci, K., Akgonul, M., & Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioral Addictions*, 4(2), 85-92. <https://doi.org/10.1556/2006.4.2015.010>
3. Elhai, J. D., Dvorak, R. D., Levine, J. C., & Hall, B. J. (2017). Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *Journal of Affective Disorders*, 207, 251-259. <https://doi.org/10.1016/j.jad.2016.08.030>
4. Haug, S., Castro, R. P., Kwon, M., Filler, A., Kowatsch, T., & Schaub, M. P. (2015). Smartphone use and smartphone addiction among young people in Switzerland. *Journal of Behavioral Addictions*, 4(4), 299-307. <https://doi.org/10.1556/2006.4.2015.037>
5. Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior*, 31, 351-354. <https://doi.org/10.1016/j.chb.2013.10.059>



6. Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction: A review of the psychological literature. *International Journal of Environmental Research and Public Health*, 8(9), 3528-3552. <https://doi.org/10.3390/ijerph8093528>
7. Kwon, M., Kim, D. J., Cho, H., & Yang, S. (2013). The Smartphone Addiction Scale: Development and validation of a short version for adolescents. *PLOS ONE*, 8(12), e83558. <https://doi.org/10.1371/journal.pone.0083558>
8. Lepp, A., Barkley, J. E., & Karpinski, A. C. (2014). The relationship between cell phone use, academic performance, anxiety, and satisfaction with life in college students. *Computers in Human Behavior*, 31, 343-350. <https://doi.org/10.1016/j.chb.2013.10.049>
9. Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, 57, 321-325. <https://doi.org/10.1016/j.chb.2015.12.045>
10. Sohn, S. Y., Rees, P., Wildridge, B., Kalk, N. J., & Carter, B. (2019). Prevalence of problematic smartphone usage and associated mental health outcomes amongst children and young people: A systematic review, meta-analysis and GRADE of the evidence. *BMC Psychiatry*, 19, 356. <https://doi.org/10.1186/s12888-019-2350-x>
11. Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. *Preventive Medicine Reports*, 12, 271-283. <https://doi.org/10.1016/j.pmedr.2018.10.003>