

Smartphone Addiction and Academic Achievement among College Students

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ABSTRACT

In this digital era, smartphones are indispensable portable gadgets for college students everyday life and academic pursuits. As a means of communication, entertainment, and information access, smartphone devices have grown indispensable to college students. Despite the convenience that smartphones offer, they also lead to new societal issues like addiction and harmful habits related to smartphone use (Al-Kandari, 2021). Some information on demographic and student related variables also collected. Smartphone use is almost universally relied on among college students. The main question whether smartphone addiction among college students has a negative predictive effect on academic performance is hardly studied. Previous research found an apparent association between smartphone use and various academic and personality variables among college students. Now a days college students very much extensively engaged in using a smartphone. This study aims to assess the relationship between smartphone addiction and students academic performance and also studying the gender differences in smartphone addiction and academic achievement. **Methods:** A sample of 80 undergraduate students (40 males and 40 females) was randomly selected from Ahilyanagar city. Students were asked to fill out a questionnaire that included smartphone addiction and academic achievement. Smartphone Addiction Scale (Yang 2013) & Achievement motivation scale by Dr. Bhargava was used for collecting the data on smartphone addiction and academic achievement variables. **Results:** By using t statistics, the difference between male and female college students with respect to smartphone addiction and academic achievement was analysed. Gender difference found among college students with respect to smartphone addiction. Correlation analysis technique was used to study the association between smartphone addiction and academic achievement among college students. Negative association was found between smartphone addiction and academic achievement among college students. 69 % reported smartphone use for at least 5 hours during a weekday. **Conclusion:** Gender differences found among college students with respect to smartphone addiction Negative relationship found between smartphone addiction and academic achievement among college students. Findings from our study can be used to better inform college administrators and faculty about most-at-risk groups of students who shall be targeted in any intervention designed to enhance low academic performance and motivation

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A smartphone is “a mobile phone that performs many of the functions of a computer, typically having a touch screen interface, internet access, and an operating system capable of running downloaded applications” (Oxford Dictionaries, 2016). There is no end to the purposes of smartphone applications (apps), with uses ranging from entertainment (gaming, web surfing, and watching/listening to streamed content), communication (connecting to friends, family and coworkers via social media apps or via specialized communication apps for checking one’s email, instant messaging, and voice-over-internet protocol calling), to information seeking (finding local and destination information and information related to academic and business pursuits, etc.). Considering the multi-purpose, mobile, and internet capabilities of a smartphone, it has become a prevalent social phenomenon. According to a survey conducted in 2015 in 40 nations by the Pew Research Centre to measure smartphone penetration, Lebanon ranked 16th with 52% of the population owning a smartphone. Due to the increase in smartphone addiction smartphone applications offer benefits to the society by offering cost-effective healthcare interventions (Zhang et al., 2014). Nevertheless, excessive usage of smartphone various researchers highlighted that sleep deficit, stress, lower concentration, loneliness, creativity blocks, insecurity, impaired relationships, poor grades, frustration are some symptoms of smartphone addiction.

Few studies have looked at how exactly smartphone addiction impacts college students' academic performance, despite the fact that many have investigated the causes of smartphone addiction and its links to mental health issues like depression and anxiety. The factors of academic anxiety and academic control should be taken into account in these investigations.

It is recognized that smartphone addiction has the following symptoms: (1) preoccupation with the smartphone and internet; (2) need to spend increasing amounts of time online; (3) repeated but unsuccessful attempts to reduce internet use; (4) suffering withdrawal symptoms from reduction of internet use; (5) time management problems; (6) environmental distress from school, family, work, and friends; (7) deception of internet time; and (8) mood modification through internet use (Lai et al., 2013). Smartphone ownership had a significant association with internet addiction (Mak et al., 2014).

Nowadays, addiction also refers to behavioral addictions such as gambling, internet gaming, or even smartphone usage. “Pathological gambling”, a behavior-related condition, for example, is listed as a diagnosable addictive disorder in a new category on “behavioral addictions” in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013). In addition, “Internet Gaming Disorder” is listed in DSM-5 as a problematic behavior awaiting more research before considering it as a formal addictive disorder (American Psychiatric Association, 2013). Although internet addiction was not listed in DSM-5, it is recognized that internet addiction has the following symptoms: (1) preoccupation with the internet; (2) need to spend increasing amounts of time online; (3) repeated but unsuccessful attempts to reduce internet use; (4) suffering withdrawal symptoms from reduction of internet use; (5) time management problems; (6) environmental distress from school, family, work, and friends; (7) deception of internet time; and (8) mood modification through internet use (Lai et al., 2013). Smartphone ownership had a significant association with internet addiction (Mak et

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al., 2014) and smartphone addiction, though also not yet included in the DSM-5, shares similar clinical features as internet addiction and other sorts of addiction (Bian & Leung, 2015; Kim, Lee, Lee, Nam, & Chung, 2014; Lee, Cho, Kim, & Noh, 2015; Lin et al., 2014).

Smartphones are seen as a dual-edged tool for young adults. On one side, the use of smart phones enables young individuals to enhance their frequency of social communication, strengthen their relationships, and become new acquaintances. Conversely, the adverse impact of inappropriate cell phone usage on young individuals is evident. More precisely, not using mobile phones correctly might diminish an individual's ability to focus and absorb knowledge during a normal class, impede direct interpersonal communication, and even result in mental or physical strain. A widely held belief is that excessive use of mobile phones results in several negative outcomes including psychological health issues, feelings of isolation, feelings of sadness, and psychiatric diseases. A recent comprehensive empirical study has examined the relationship between smartphone addiction and mental health (Zhang et al., 2020). College students, in particular, are vulnerable to smartphone addiction due to their increased exposure to smartphones and the pressure to stay connected with peers and academic demands (Cain & Gradisar, 2010). The present study highlights the importance of crucial role of smartphone addiction and academic achievement among college students.

REVIEW OF LITERATURE

The excessive use of smartphones hampers the students' ability to efficiently manage their time. Students burdened with smartphone addiction will primarily dedicate their time to using their devices, rather than participating in other activities. Their activities include actively updating their social media status, commenting on other status updates, and participating in chats via WhatsApp. Moreover, students who possess a profound fondness for smartphones typically derive pleasure from and make use of a wide range of entertainment and functionalities that can be easily accessed through their mobile devices. These activities encompass internet gaming, music, movies, and web browsing, enabling users to retrieve a wide range of online content. Therefore, this characteristic results in a reduction in the time allocated to the process of acquiring knowledge. There exists a positive correlation between decreased study time among students and lower academic achievement as compared to those who have an adequate amount of learning time. The prevalence of smartphone or internet addiction among students presents difficulties in completing homework, engaging in exam preparation, and effectively managing time for sleep. These several scenarios can have an impact on college activities and result in subpar academic performance.

A widely held belief is that excessive use of smartphone results in several negative outcomes including psychological health issues, feelings of isolation, feelings of sadness, and psychiatric diseases. A recent comprehensive empirical study has examined the relationship between mobile phone addiction and mental health (Zhang et al., 2020).

Research has extensively shown the link between excessive use of mobile phones and diminished sleep quality. Multiple empirical investigations, like those carried out by Kang et al. (2020), have given evidence that extended exposure to the light emitted by mobile phones can inhibit the production of melatonin in humans, therefore affecting the quality of sleep. More exactly, the persistent use of mobile phones can disturb the sleep habits of individuals and extend the duration required for them to fall asleep (He et al., 2020). Smartphone addiction has significant adverse consequences, such as diminishing the quality of

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interpersonal relationships among college students, resulting in feelings of isolation. Depression among college students can be attributed to these adverse elements. A prior study demonstrated that mobile phone addiction, as a component of internet addiction, exhibited a notable positive association with depression. Furthermore, according to the time displacement model, excessive use of mobile phones can result in a deterioration of social abilities and the emergence of sadness (Feng, 2022).

In contrast, students who do not possess motivation drive are prone to becoming easily disheartened, experiencing difficulty focusing during lectures, and often failing to attend instructional sessions. Each of these activities has the potential to result in learning challenges and subpar academic achievement. (Bukhori and colleagues, 2019) Utilisation of smart phones or mobile phones has both beneficial and detrimental effects. The utilization of smartphones has demonstrated its utility and beneficial impact on numerous students, while simultaneously resulting in negative consequences for certain individuals. Numerous studies have revealed that young individuals, particularly students, have been subjected to excessive or hazardous usage of smartphones. They are adversely exposed to the detrimental effects of smartphone addiction, which subsequently impairs their academic performance. (Tuan J, et al. 2021).

Smartphone addiction is a phenomenon characterised by the manifestation of excessive, obsessive, or dangerous behaviours in individuals in relation to their use of smartphones (Elhai, 2017).

College students are the most rapid adopters of smartphone technology (Smith, Rainie, & Zickuhr, 2011), and research suggests associations between smartphone use and their health and academic achievement, with the direction of the latter association being partly determined by the nature of the task a student is engaged in when using the smartphone.

In a more recent study done on undergraduate college students from a public US university, a negative association between texting and academic performance was found (Lepp, Barkley, & Karpinski, 2014). In terms of male students, male heavy internet users favoring online games had lower average academic grades than male non-heavy users and those who especially favor information seeking and chatting (Chen & Tzeng, 2010).

Previous research showed that smartphone and internet addiction were significantly associated with alcohol abuse, depression and anxiety (Ho et al., 2014; Matar Boumosleh & Jaalouk, 2017), poor sleep quality (Zhang et al., 2017), and quality of life (Tran et al., 2017).

Studies in India consistently show a negative correlation between smartphone addiction and academic achievement among college students, with addiction leading to lower grades and increased academic anxiety.

Research indicates that higher levels of smartphone addiction are associated with lower academic performance and GPA. Factors like male gender, regular mobile gaming, seeking recognition/popularity through social media, and frequent smartphone checking are associated with smartphone addiction.

In as study entitled The Effects of Smartphone Addiction on Academic Performance among undergraduate Medical Students in Karnataka, India: A Multi-centric Study by Zeerak e tal

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(2024) concluded that smartphone addiction has a negative impact on the academic performance of students.

Despite the benefits of smartphones in education, smartphone addiction and its associated internet addiction pose significant challenges to parents, guardians, and educators worldwide. Many students are seen spending long hours on their phones, chatting with friends, using social media applications, browsing the internet, and watching entertainment-related content, in addition to using them for studies. Numerous studies have tried to assess the impact of this usage on students' overall academic performance. While some studies have reported smartphones having a positive effect on students' academic performance, most have found a negative impact. It has been observed that the indiscriminate and excessive use of mobile phones has adversely affected psycho-social behavioral traits and mental health, interpersonal relationships, physical health, and academic performance among students in recent years.

Smartphone addiction affects students' learning both in the classroom and outside. A study by Khatgaonkar et al. (2020) from Pune, India reported that 38% of nursing students used smartphones while a lecture was going on in class, Texting, listening to music, accessing social media, or even gaming during lectures is not uncommon in medical students. When studying at the hostel or at home, mobile-addicted students often check their mobile phones for notifications or use apps of their interest, which breaks their concentration, reducing their cognitive performance as well as their overall reading time. Thus, both the quality and quantity of reading are affected. The impact of smartphone addiction on academic performance is particularly significant within the medical student community, given their role as future healthcare professionals responsible for patient care and well-being, making it imperative to address this issue.

Given that smartphone addiction leads to decreased academic performance, it is important to know why the students are getting addicted, and what are the risk factors associated with mobile addiction. This study observed that males (54.2%) had significantly higher addiction to smartphones compared to females (37.7%). A global literature search on this topic revealed mixed results with some studies finding males at higher risk of smartphone addiction whereas the others found females to be at higher risk. Thus, we can infer that we need to educate and protect all genders from this hazard of mobile addiction. An interesting finding was revealed in a study by Nayak et al., where they observed that smartphone addiction was more prevalent in females; however, the negative effect on academic performance was more profound among male students.

Objectives

- To study the differences in smartphone addiction and academic achievement among college students.
- To study the gender differences in smartphone addiction and academic achievement among college students
- To study the association between smartphone addiction and academic achievement.

Variables

- Independent variable: Gender
- Dependent variable: Smartphone addiction and academic achievement

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Hypotheses

- There is no significant gender differences among college students with respect to smartphone addiction
- There is no significant gender differences among college students with respect to academic achievement
- There is negative association between smartphone addiction and academic achievement among college students.

Tools

- **Smartphone addiction scale by Yang S. (2013):** This scale contains 10 items regarding smartphone addiction. It has 5 point scale response category from strongly agree to strongly disagree. Reliability and validity of the scale is found to be satisfactory.
- **Achievement motivation test (ACMT) by Dr. V.P. Bhargava:** Test contains 50 items with three choices out of which subject has to be mark on right one. The reliability and validity coefficients were reported as 0.87 and 0.80. It takes about 15 to 25 minutes to complete all items of the test.

DISCUSSION

Comparison on smartphone addiction and academic achievement among college students.

Variable	Gender	N	Mean	SD	t
Smartphone addiction	Male	40	28.8	4.75	3.69**
	Female	40	33.7	5.5	
Academic achievement	Male	40	24.63	6.10	0.82 NS
	Female	40	23.57	5.74	
** t value is significant at 0.01 level					
NS: t value is not significant.					

The above table shows the t statistics for smartphone addiction and academic achievement among college students. For smartphone addiction male mean score is 28.8 and female 33.7. mean score was higher for female group. This denotes that female are higher on smartphone addiction as compare to male college students. t value of 3.69 is statistically significant at 0.01 level.

For academic achievement male mean score is 24.63 and female 23.57. This denotes that there was not much difference in mean score on academic achievement among male and female college students. t value of 0.82 is statistically nonsignificant.

Correlation analysis

Variable	Correlation	N
Smartphone addiction	-0.23 * Male,	80
Academic achievement	-024 * Female	
* correlation value is significant at 0.05 level		

The above table shows the association between smartphone addiction and academic achievement among college students. The correlation analysis shows negative correlation between smartphone addiction and academic achievement among college students. The analysis of the data revealed a negative link between smartphone addiction and academic

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achievements among college students, indicating that increased smartphone use during studying has a more significant negative effect on learning.

The findings of this study suggest that smartphone addiction is a significant concern among college students in India, with potential negative impacts on academic achievement. The negative correlation between smartphone addiction and academic achievement is consistent with previous research (Kuss & Griffiths, 2011). It reveals that smartphone addiction was a significant predictor of academic achievement, highlighting the need for interventions aimed at reducing smartphone addiction among college students.

CONCLUSION

This study highlights the importance of addressing smartphone addiction and academic achievement among college students in India.

Gender differences found among college students with respect to smartphone addiction. Negative relationship found between smartphone addiction and academic achievement among college students. Findings from our study can be used to better inform college administrators and faculty about most-at-risk groups of students who shall be targeted in any intervention designed to enhance low academic performance and motivation. To address this growing phenomenon, policymakers should implement various cognitive-behavioural therapies, interventions like remedial coaching, and some positive psychology techniques for boosting the academic achievement among college students. Educational institutions and policymakers must develop strategies to promote responsible smartphone use and provide resources to support students struggling with smartphone addiction. Future research should focus on developing and evaluating interventions aimed at reducing smartphone addiction and improving academic achievement among college students.

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Conflict of Interest

The author(s) declared no conflict of interest.

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