Impact of Mobile Phone Addiction and Procrastination on Student Achievement

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Abstract

Background: Mobile phone addiction and academic procrastination are common challenges among medical students, negatively influencing academic outcomes.

Objective: This study explored the influence of demographic factors on mobile phone addiction, academic procrastination, and academic achievement among Pakistani medical students, and examined the association between these variables.

Methodology: A cross-sectional study was conducted at University College of Medicine & Dentistry, Lahore, between May and June 2024. A total of 3,511 medical students completed an online questionnaire (response rate = 81.7%). Instruments included a demographic survey, the Scale of Academic Achievement, Mobile Phone Problem Use Scale (MPPUS-10), and Academic Procrastination Scale–Short (APS-S). Data were analyzed using variance analysis and hierarchical regression.

Results: Mean scores were: academic procrastination 2.66 ± 0.91, mobile phone addiction 5.13 ± 1.53, and academic achievement 4.51 ± 0.71. Gender, study year, leadership experience, and family income showed significant differences. Mobile phone addiction was negatively associated with learning dedication, learning performance, and relationship facilitation. Academic procrastination was negatively related to learning dedication, learning performance, relationship facilitation, and objective achievement.

Conclusion: Mobile phone addiction and academic procrastination are prevalent among Pakistani medical students at University College of Medicine & Dentistry, Lahore with significant negative impacts on academic achievement. Institutional strategies are needed to mitigate these behaviors.

Keywords: Medical Students, Pakistan, Academic Achievement, Mobile Phone Addiction, Academic Procrastination.

Introduction:

Medical education is universally acknowledged as the cornerstone of producing competent healthcare providers who can meet the ever-growing demands of healthcare systems. Academic success in medical institutions not only determines the progression of students but also reflects the quality of training programs in developing future doctors. Academic achievement encompasses knowledge acquisition, clinical skills, professional attitudes, and behaviors that are integral to becoming competent physicians [1]. It is usually evaluated through theoretical examinations, practical performance, and cumulative professional development.

Several internal and external factors influence academic achievement. Internal factors include students' motivation, learning styles, self-esteem, and psychological well-being [2–5]. External factors such as family support, socio-economic status, and peer influence also play a significant role [6]. Among psychological variables, academic procrastination has been consistently shown to negatively impact learning outcomes. Procrastination, defined as the intentional delay in completing academic tasks, is often associated with stress, reduced productivity, poor time management, and eventually lower academic performance [7,8].

Parallel to this, the increasing reliance on smartphones has led to problematic patterns of mobile phone use, often termed as mobile phone addiction. Mobile phone addiction is characterized by excessive, uncontrollable, and compulsive use of mobile devices that interferes with daily activities, including education [9]. Studies across the globe have indicated that excessive mobile phone use results in poor sleep, lack of concentration,

social withdrawal, and deteriorated academic achievement [10,11]. In Pakistan, smartphone penetration has risen sharply over the last decade, and students constitute a significant portion of the user population. While smartphones can aid in learning by providing access to online resources, instant communication, and medical applications, their misuse can lead to distractions, academic procrastination, and reduced learning efficiency.

Medical students in particular are vulnerable due to their prolonged study duration, heavy academic load, and the pressure to perform well. With the demands of extensive theoretical knowledge and rigorous clinical training, distractions such as mobile phone addiction can significantly compromise academic achievement. Previous international studies have established negative correlations between mobile phone addiction, procrastination, and academic performance [12–15]. However, limited research has focused on these issues within the Pakistani medical education context.

Therefore, this study was conducted at UCMD Lahore, to investigate the prevalence and impact of mobile phone addiction and academic procrastination on academic achievement among medical students. It also examined the role of demographic factors such as gender, year of study, leadership experience, and family income in influencing these academic behaviors.

Methods:

This cross-sectional study was carried out at University College of Medicine & Dentistry, Lahore, between May and June 2024. A stratified convenient sampling technique was used to ensure representation of students

from all academic years. Based on recommended sample size calculations, a minimum of 1,824 participants was required; however, 3,511 valid responses were obtained, yielding an effective response rate of 81.7%.

Participants were informed about the purpose of the study, and written informed consent was obtained before participation. The inclusion criteria were: (1) being an enrolled medical student of UCMD (2) voluntary participation, and (3) completion of the entire survey. Questionnaires completed in less than 8 minutes or with incorrect responses to control questions were excluded.

The survey included demographic information such as gender, residence (urban or rural), year of study, leadership experience, and monthly family income. Academic achievement was measured using the Scale of Academic Achievement [16], which covers four dimensions: learning performance, relationship facilitation, learning dedication, and objective achievement. Mobile phone addiction was assessed using the Mobile Phone Problem Use Scale (MPPUS-10) [17], which evaluates craving, withdrawal, peer acceptance, negative consequences, and loss of control. Academic procrastination was measured using the Academic Procrastination Scale–Short (APS-S) [18].

Data collection was performed using an online platform, and responses were regularly monitored for quality control. Data analysis was conducted using IBM SPSS Statistics 23.0. Descriptive statistics were calculated for demographics and study variables. Variance analysis was employed to examine associations between demographic factors and study outcomes. Hierarchical multiple regression analysis was performed to evaluate the predictive relationships between mobile phone addiction, academic procrastination, and academic achievement. Statistical significance was set at $p < 0.05$.

Results:

A total of 3,511 medical students participated in the study. The majority were females (65.99%) and urban residents (54.09%). About one-third (35.46%) had leadership experience. The largest proportion of students were in the first year (30.82%), followed by second year (28.51%) and third year (22.67%). Most students belonged to families with a monthly income between PKR 50,001–100,000 (48.45%). The mean score for mobile phone addiction was 5.13 ± 1.53, while academic procrastination averaged 2.66 ± 0.91. Academic achievement dimensions included learning dedication (4.29 ± 0.92), learning performance (4.52 ± 0.77), relationship facilitation (4.62 ± 0.77), and objective achievement (3.42 ± 0.77). Correlation analysis revealed a strong negative relationship between mobile phone addiction and academic achievement ($r = -0.780$, $p < 0.01$), and between procrastination and academic achievement ($r = -0.285$, $p < 0.01$). Regression analysis further demonstrated that both mobile phone addiction and academic procrastination were significant predictors of reduced learning dedication, performance, and interpersonal facilitation.

Table 1: Participant Demographics

Variable	Categories	n (%)
Gender	Male	1,194 (34.01)
	Female	2,317 (65.99)
Residence	Rural	1,612 (45.91)
	Urban	1,899 (54.09)
Leadership Experience	Yes	1,245 (35.46)
	No	2,266 (64.54)
Year of Study	1st Year	1,082 (30.82)
	2nd Year	1,001 (28.51)
	3rd Year	796 (22.67)
	4th Year	235 (6.69)
	Final Year	397 (11.31)
Family Monthly Income	≤ PKR 50,000	1,468 (41.81)
	50,001–100,000	1,701 (48.45)
	100,001–200,000	316 (9.00)
	≥ 200,001	26 (0.74)

Table 2: Descriptive Statistics of Study Variables

Variable	Mean ± SD	Range
Mobile phone addiction	5.13 ± 1.53	1–10
Academic procrastination	2.66 ± 0.91	1–5
Learning dedication	4.29 ± 0.92	1–6
Learning performance	4.52 ± 0.77	1–6
Relationship facilitation	4.62 ± 0.77	1–6
Objective achievement	3.42 ± 0.77	1–5

Table 3: Correlation Analysis Between Main Variables

Variables	1	2	3
Academic achievement	1		
Mobile phone addiction	−0.780**	1	
Academic procrastination	−0.285**	0.457**	1

Table 4: Regression Analysis of Predictors of Academic Achievement

Predictor	Academic Outcome	β	p-value
Mobile phone addiction	Learning dedication	−0.080	<0.01
	Learning performance	−0.112	<0.01
	Relationship facilitation	−0.033	<0.05
Academic procrastination	Learning dedication	−0.220	<0.01
	Learning performance	−0.322	<0.01
	Relationship facilitation	−0.171	<0.01
	Objective achievement	−0.154	<0.01

Discussion:

This study has pointed out the high prevalence of mobile phone addiction and academic procrastination among Pakistani medical students at University College of Medicine & Dentistry, both of which have been found to impact negatively on academic achievement. The findings are consistent with international studies that report negative correlations between excessive mobile phone use, procrastination, and academic outcomes [12,14]. However, this research adds to the literature by providing localized evidence within the Pakistani context.

The present study found a higher prevalence of mobile phone addiction among male students, which is in line with previous studies indicating that males have a higher tendency to experience problematic phone use and related behavior in general [19]. The difference may be because of variations in social use, learning, and coping styles between genders. Also, on the protective side was the leadership experience, whereby the leadership role in students was associated with better learning dedication, better performance, and less procrastination. This supports studies that claim leadership is associated with a better self-regulatory capacity in the form of more planning and responsibility [20].

This negative effect of mobile phone addiction on learning dedication, performance, and interpersonal facilitation indicates that mobile phones could be significant distractions. Excessive use may lead to academic burnout, bad sleep, loneliness, and stress [21,22]. Interestingly, there was no significant effect of mobile phone addiction on objective achievement; this may perhaps be because students perceived mobile phones as a tool to support their academic work, such as accessing study material or communicating with peers.

In contrast, academic procrastination had a wider unfavorable impact on all dimensions of academic achievement. Procrastination is often associated with task avoidance, enhanced stress, and feelings of guilt, which interfere with both behavioral and subjective achievement [23]. Such findings indicate that procrastination among medical students not only reduces academic productivity but also leads to lower well-being.

Considering the high demands of studying medicine, these findings emphasize the need for an institutional approach. Awareness programs related to mobile phone addiction and procrastination should be included in university curricula. Counseling services, workshops focusing on digital well-being, and systematic mentorship could promote healthier learning behavior among students. The demographic variables of students, such as socio-economic status and holding leadership positions, should also be taken into account when faculty members design academic support programs for them.

Conclusion:

Mobile phone addiction and academic procrastination are serious problems that severely impact the learning performance, commitment, interpersonal relationships, and accomplishments of Pakistani medical students. The results indicate comprehensive interventions comprising awareness, digital

hygiene promotion, and counseling services that will help reduce their impact. Longitudinal designs shall be considered in future studies to determine causality, and this work should also be extended across multiple institutions for broader generalizability.

Authors' Contribution:

Z.M designed and conceptualized the study, supervised data interpretation, and drafted and critically revised the manuscript. She has approved the final version for publication and takes full responsibility for the integrity of the work.

Conflict of Interest:

Authors declare no conflict of interest.

Funding and Ethics:

This research was self-funded by the author.

The study was conducted in accordance with

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