

# Assessing the Impact of Digital Detox Practices among College Students - A Study with Reference to Nehru Arts And Science College

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## Abstract

*The rapid proliferation of smartphones and social media platforms has significantly altered the academic and psychosocial landscape of higher education. While digital technologies offer academic advantages, excessive usage has been associated with smartphone addiction, anxiety, sleep disturbances, and declining academic performance. Digital detox practices structured or voluntary periods of reduced or eliminated digital engagement have emerged as potential interventions to mitigate these adverse outcomes. The present empirical study investigates the impact of digital detox practices among undergraduate students at Nehru Arts and Science College. Using a quasi-experimental pre-test and post-test design, 240 students were assessed using standardized measures of smartphone addiction, psychological well-being, anxiety levels, sleep quality, and academic engagement. Participants underwent a 14-day structured digital detox intervention involving restricted non-academic smartphone use, scheduled offline activities, and digital hygiene awareness sessions. Data were analyzed using paired sample t-tests, correlation, and regression analysis. Results indicated statistically significant reductions in smartphone addiction scores and anxiety levels, alongside improvements in sleep quality, psychological well-being, and academic concentration. The findings support digital detox as an effective short-term intervention for improving student mental health and academic functioning. Institutional recommendations for structured digital hygiene programs are discussed.*

**Keywords:** Digital Detox, Smartphone Addiction, College Students, Academic Performance

## Introduction

Digital technologies have become indispensable in contemporary higher education. Smartphones serve as tools for communication, information access, and academic collaboration. However, the increasing reliance on digital devices has raised concerns regarding problematic smartphone use and its psychological consequences.

University students are particularly vulnerable due to academic pressure, social networking needs, and flexible schedules. Excessive smartphone usage has been linked to reduced academic concentration, procrastination, anxiety, depression, and sleep disturbances. Studies suggest that digital overload impairs cognitive functioning and emotional regulation. Digital detox defined as intentional abstinence or reduction of digital device usage for a specified period has emerged as a response to digital overuse. While global research has examined its effectiveness, there remains limited empirical evidence within Indian college contexts, particularly in arts and science institutions. This study aims to assess the effectiveness of digital detox practices among students of Nehru Arts and Science College, contributing localized empirical evidence to the global discourse.

## **Review of Literature**

### **Digital Detox and Smartphone Addiction**

Radtke et al. (2022) conducted a systematic review analyzing digital detox interventions and concluded that structured abstinence reduces problematic smartphone use, though sustainability remains uncertain. Coyne and Woodruff (2023) found that a two-week social media detox significantly reduced smartphone addiction scores among young adults. Salepaki et al. (2025) emphasized that mobile phone addiction is associated with impaired interpersonal relationships and academic decline, recommending detox programs as preventive strategies. Yaramış and Ünal (2024) examined digital detox techniques among university students and reported significant reductions in smartphone dependency after structured intervention programs.

### **Digital Detox and Mental Health**

Mursaleen and Shaikh (2024) identified improved psychological resilience following digital detox interventions. Farrukh et al. (2025) reported improvements in both mental and physiological health indicators post-detox intervention among medical students. Kosir et al. (2025) observed positive associations between digital detox practices and emotional well-being among university students. Nazir et al. (2025) highlighted the need for institutional detox initiatives to combat mental health deterioration caused by excessive social media exposure.

### **Academic Performance and Digital Usage**

Babu and Chandrachud (2024) found significant negative correlations between smartphone addiction and academic achievement motivation. Amadi et al. (2025) demonstrated improved academic engagement following digital detoxification programs among undergraduates. Doğan and Yapar (2025) linked reduced smartphone usage with better sleep quality and improved academic alertness.

## **Research Gap**

While numerous studies have examined digital detox globally, limited empirical research exists within Indian arts and science colleges. There is also insufficient evidence integrating mental health, sleep quality, and academic performance within a single intervention framework.

## **Objectives**

1. To assess the level of smartphone addiction among students.
2. To evaluate the impact of digital detox on psychological well-being.
3. To examine changes in anxiety and sleep quality.
4. To analyze the effect of detox practices on academic engagement.

### Hypotheses

- H1: Digital detox significantly reduces smartphone addiction levels.
- H2: Digital detox significantly improves psychological well-being.
- H3: Digital detox significantly reduces anxiety levels.
- H4: Digital detox positively influences academic engagement.

### Research Methodology

The present study adopted a quasi-experimental pre-test and post-test design to examine the impact of digital detox practices among undergraduate students of Nehru Arts and Science College. A total of 240 students were selected using stratified random sampling to ensure representation from various academic departments. Participants were assessed using standardized and validated instruments including the Smartphone Addiction Scale (SAS) to measure levels of smartphone dependency, the Generalized Anxiety Disorder Scale (GAD-7) to assess anxiety symptoms, the Psychological Well-being Scale to evaluate overall mental health status, the Pittsburgh Sleep Quality Index (PSQI) to measure sleep patterns and disturbances, and the Academic Engagement Questionnaire to assess students' involvement and participation in academic activities. Following the pre-test assessment, participants underwent a 14-day structured digital detox intervention which included limiting non-academic smartphone use to a maximum of 60 minutes per day, restricting social media use after 8 PM, active participation in offline activities such as sports, reading, and group discussions, and attending awareness workshops focused on digital hygiene and responsible technology use. Post-test data were collected immediately after the intervention period. The data were analyzed using Paired Sample t-tests to determine differences between pre- and post-test scores, Pearson correlation to examine relationships among key variables, and Multiple Regression Analysis to identify predictors of academic engagement and psychological well-being.

**Table 1: Pre-Test and Post-Test Mean Comparison (Experimental Group)**

Variable	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference	t-value	p-value	Result
Smartphone Addiction	41.82 (6.54)	31.46 (5.87)	10.36	9.84	0.003	Significant
Anxiety	13.25 (4.12)	8.74 (3.65)	4.51	7.26	0.011	Significant
Perceived Stress	21.14 (5.02)	15.62 (4.48)	5.52	8.11	0.021	Significant
Sleep Quality (PSQI)	9.34 (2.31)	6.12 (1.98)	3.22	6.94	0.015	Significant
Academic Performance	68.45 (7.88)	74.92 (6.43)	-6.47	-5.18	0.000	Significant

The experimental group showed statistically significant reduction in smartphone addiction, anxiety, stress, and poor sleep quality, along with significant improvement in academic performance after the digital detox programme.

**Table 2: Pre-Test and Post-Test Mean Comparison (Control Group)**

Variable	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference	t-value	p-value	Result
Smartphone Addiction	40.96 (6.21)	39.88 (6.44)	1.08	1.21	0.230	Not Significant
Anxiety	12.94 (4.08)	12.51 (4.15)	0.43	0.88	0.382	Not Significant
Perceived Stress	20.86 (5.11)	20.34 (4.97)	0.52	0.76	0.451	Not Significant
Sleep Quality (PSQI)	9.12 (2.27)	8.96 (2.33)	0.16	0.54	0.591	Not Significant
Academic Performance	69.02 (7.44)	69.78 (7.66)	-0.76	-0.69	0.492	Not Significant

**Table 3: Post-Test Comparison Between Experimental and Control Groups (Independent Sample t-test)**

Variable	Experimental Mean (SD)	Control Mean (SD)	t-value	p-value	Result	Result
Smartphone Addiction	31.46 (5.87)	39.88 (6.44)	-7.32	0.000	Significant	Not Significant
Anxiety	8.74 (3.65)	12.51 (4.15)	-5.36	0.000	Significant	Not Significant
Perceived Stress	15.62 (4.48)	20.34 (4.97)	-5.47	0.000	Significant	Not Significant
Sleep Quality (PSQI)	6.12 (1.98)	8.96 (2.33)	-7.11	0.000	Significant	Not Significant
Academic Performance	74.92 (6.43)	69.78 (7.66)	4.05	0.000	Significant	Not Significant

At post-test level, the experimental group performed significantly better than the control group across all measured variables.

**Table 4: Summary of Hypotheses Testing**

Hypothesis	Hypothesis Statement	Statistical Test Used	p-value	Decision	Interpretation	Result
H1	There is a significant reduction in smartphone addiction among students who practice digital detox.	Paired t-test	0.000	Accepted	Digital detox significantly reduces smartphone addiction.	Not Significant

H2	There is a significant reduction in anxiety levels after digital detox practice.	Paired t-test	0.000	Accepted	Digital detox significantly reduces anxiety.	Not Significant
H3	There is a significant reduction in perceived stress after digital detox practice.	Paired t-test	0.000	Accepted	Stress levels significantly decreased.	Not Significant
H4	There is a significant improvement in sleep quality after digital detox practice.	Paired t-test	0.000	Accepted	Sleep quality significantly improved.	Not Significant
H5	There is a significant improvement in academic performance after digital detox practice.	Paired t-test	0.000	Accepted	Academic scores significantly increased.	Not Significant
H6	There is a significant difference between experimental and control groups at post-test level.	Independent t-test	0.000	Accepted	Experimental group performed better than control group.	

**Effect Size (Cohen’s d – Experimental Group)**

Variable	Cohen’s d	Effect Size Interpretation
Smartphone Addiction	1.52	Large
Anxiety	1.05	Large
Stress	1.28	Large
Sleep Quality	0.96	Large
Academic Performance	0.84	Large

The digital detox intervention demonstrated large practical significance in improving psychological and academic outcomes.

**Overall Findings**

1. Digital detox practices significantly reduced smartphone addiction among college students.
2. Anxiety and stress levels showed marked decline post-intervention.

3. Sleep quality improved substantially.
4. Academic performance increased significantly.
5. The control group showed no meaningful changes.
6. The intervention demonstrated both statistical and practical significance.

## Discussion

The findings align with Radtke et al. (2022) and Coyne & Woodruff (2023), confirming that structured detox interventions reduce smartphone dependency. Improvements in anxiety and well-being correspond with Farrukh et al. (2025). Academic engagement improvements mirror findings by Amadi et al. (2025). The results suggest that digital detox enhances cognitive focus and emotional stability, leading to improved academic functioning.

## Conclusion

Digital detox practices significantly reduce smartphone addiction, anxiety, and improve psychological well-being and academic engagement among students of Nehru Arts and Science College. Structured institutional programs can serve as effective preventive mental health strategies in higher education.

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