

## Original Article

# Short-Form Video Addiction, Mindfulness, And Cognitive Failure Among Undergraduate University Students

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## Abstract

**Objective:** This quantitative study aimed to investigate the impact of short-form video addiction and mindfulness on cognitive failures among undergraduate university students.

**Place and duration of study:** The study was conducted in various health care units of Rawalpindi and Islamabad for 6 months from .

**Material and Methods:** The Data were gathered through a survey method from undergraduate university students (N = 239) using the convenience sampling technique. The instruments included the Short-form Video Addiction Scale, Mindfulness Attention Awareness Scale, and Cognitive Failure Questionnaire 2.0.

**Results:** Multiple regression analysis showed that short-form video addiction positively predicts cognitive failures, meaning that participants with higher short-form video addiction experienced higher cognitive shortcomings. Conversely, mindfulness was negatively associated with cognitive failures, indicating that more mindful participants experienced fewer lapses in their cognitive functioning during day-to-day tasks

**Conclusion:** The findings suggest that mindful students struggle less with cognitive lapses, and mindfulness may help counteract the adverse effects of short-form video addiction. These results provide a foundation for further research on mitigating the cognitive costs of short-form video addiction.

**Keywords:** : Short-Form Video Addiction; Cognitive Failure; Mindfulness

## 1. Introduction

The internet and social media have reshaped communication and self-presentation, with short-form video applications (SVAs) like TikTok and Instagram Reels gaining massive popularity. TikTok alone has over 2.05 billion users worldwide, including 54.38 million in Pakistan. Despite their brief 1–5 minute format, these videos often foster addictive behaviors through continuous auto-play. While not clinically classified, social media addiction activates the brain's reward system like gambling, posing risks to mental health, relationships, and quality of life. Excessive use of SVAs has been linked to impaired attention, time management, and learning, alongside a global decline in attention spans due to constant information overload. Mindfulness can be cultivated through daily awareness, meditation, and structured interventions<sup>(1)</sup> and is

understood both as a trainable state and as a personal trait that varies among individuals.<sup>(2)</sup> Research shows that mindfulness helps individuals regulate fear-based reactions<sup>(3)</sup>, reduces workplace errors and accidents,<sup>(4)</sup> and improves memory, executive control, and academic performance.<sup>(5)</sup> Research shows that frequent context switching during short-form video use negatively impacts memory and attention.<sup>(6,7)</sup> Attention, essential for encoding information into memory, can be trained but is also weakened by constant digital stimulation. Norman (1981) categorized cognitive failures into errors in intention, schema activation, and action triggering. This study focuses on how Short-Form Video addiction and mindfulness interact with these cognitive processes.

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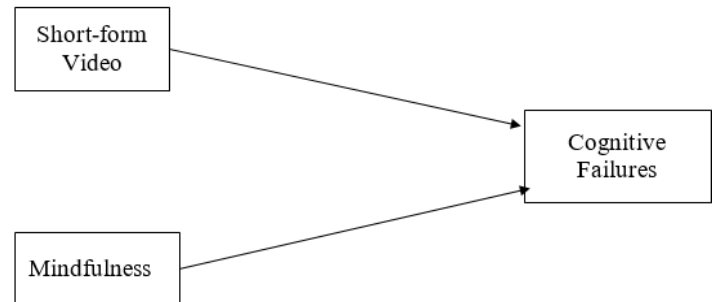
Research shows that excessive internet and social media use, especially short-form video applications like TikTok and Instagram Reels, negatively impacts cognition, attention, and decision-making, often leading to addictive behaviors. <sup>(8,9,10)</sup> Studies highlight associations between problematic internet use, reduced academic performance, irritability, depression, and cognitive failures such as memory lapses and distractibility. <sup>(11,12,13)</sup> Neurological evidence suggests internet use overstimulates decision-making regions of the brain, fostering addictive patterns. <sup>(14)</sup> Media multitasking further reduces cognitive control and attentional focus. <sup>(15)</sup> In contrast, mindfulness is consistently shown to protect against cognitive failures by enhancing attention, working memory, flexibility, and emotional regulation, with both trait and trained mindfulness linked to improved executive functioning across diverse populations. <sup>(16,3,17,5)</sup> Overall, while excessive SVA use impairs cognition, mindfulness serves as a protective factor.

Social media use has been explained through conceptual frameworks like Uses and Gratification Theory, which highlights goal-oriented media use to fulfill personal needs, but excessive reliance can lead to irrational dependence and instant gratification tendencies, particularly harmful for students balancing academic goals. <sup>(18,19,20)</sup> Short-form video applications (SVA) exacerbate cognitive failures by overloading attentional resources, impairing concentration, and fostering internet addiction, which disrupts memory, inhibitory control, and emotional well-being. <sup>(9,21,22,23)</sup> Theories such as Cognitive Resource Theory and Distraction-Conflict Theory explain these deficits, while the Broaden-and-Build Theory suggests that mindfulness can counteract them by enhancing positive emotions, broadening attention, improving cognitive flexibility, and reducing errors. <sup>(24,25,26)</sup>

This study aims to examine the impact of short-form video addiction (SVA) and mindfulness on the cognitive functioning of university students. SVA is a relatively newer concept linked to cognitive failures such as memory lapses, attention deficits, and poor decision-making. University students are the key

demographic due to their heavy use of these platforms. Prior research suggests that higher mindfulness reduces cognitive failures by improving attention and reducing distractions. <sup>(27)</sup> However, the direct relationship between mindfulness and cognitive failures remains underexplored, which this study seeks to address.

### Conceptual Framework



## 2. Materials & Methods

This is a quantitative study that followed a cross-sectional correlational design as data were collected via the survey method at a single point in time. The sample size calculated using G-Power was 140; however, the current study employed a sample of 239 undergraduate students in the age range of 18-25 years with access to short-form video applications. 241 responses (Male=106 Female=135) were gathered from which 2 cases were discarded due to one form being empty and the other not meeting the inclusion age criteria, in the age range of 18-25 years old (M = 20.82, SD = 1.80) from all departments of Bahria University, Islamabad, where data was gathered using a convenience sampling technique.

### Instruments

#### Short-form Video Addiction Scale

Short-form video addiction was assessed using the short-form video addiction subscale from the Mobile Phone Addiction Type scale, which was developed by Liu and colleagues in 2022. It has excellent internal reliability as its reported alpha value is 0.89. This self-

report scale has 15 items, which are scored on a 5-point Likert scale ranging from very often to never.

**Mindfulness Attention Awareness Scale**

Mindfulness was evaluated using the Mindfulness Attention Awareness Scale, <sup>(16)</sup> which has 15 items rated on a 6-point Likert scale ranging from 1 (almost always) to 6 (almost never). Total scores are calculated by computing the sum and then finding the average. Higher total scores indicate greater levels of mindfulness. The scale has demonstrated good internal consistency reliability, with Cronbach's alpha of 0.82.

**Cognitive Failure Questionnaire 2.0**

Cognitive failure was measured using the Cognitive Failure Questionnaire 2.0 (CFQ 2.0), which measures attention, memory, maladaptive emotion regulation failure, and cognitive functioning in the everyday life of the individual, considering the past 6 months. The scale has good reliability as its Cronbach's alpha value is 0.80. <sup>(28)</sup>

**Procedure**

The study commenced after obtaining permission from the respective authors to use the selected scales. A consent form was attached to the survey, outlining the purpose of the research, ensuring confidentiality, and informing participants of their right to withdraw at any stage. The demographic section collected information on age, gender, socioeconomic status, family type (nuclear or joint), student type (hostelite or day scholar), department, daily time spent on short-form videos, and the applications used. After securing approval from the administration and institutional bodies, the questionnaires were distributed to undergraduate students across various departments at Bahria University. Participants were provided with a brief overview of the study and were encouraged to contact the researchers for any questions during the process, with an email address provided for further clarification. On average, it took participants 15–20 minutes to complete the survey.

**3. Results**

The demographic characteristics showed that the majority of the participants were females. The students were mostly from the engineering department, followed by the psychology and business departments, and the least number of respondents reported that they were attending a media science course. The respondents mostly came from a nuclear family and attended university as day scholars. The social media application popular for viewing short-form videos was Instagram, followed by YouTube and TikTok. The applications reported in the 'others' category were LinkedIn and Pinterest. The participants, on average, spent 2.78 hours watching short-form videos daily

**Table 1**  
Psychometric Properties of Short-form Video Addiction Scale, Mindfulness Attention Awareness Scale and Cognitive Failures Questionnaire 2.0

No.	Scales	k	M	SD	Range		α
					Actual	Potential	
1	SVA	7	18.83	6.10	7-35	7-35	.83
2	MAAS	15	3.51	.96	1-6	1-6	.87
3	CFQ 2.0	15	22.23	11.04	0-56	0-75	.87

Note. k = number of items; M = mean; SD = standard deviation; N = 239; SVA = Short-form Video Addiction; MAAS = Mindfulness Attention Awareness Scale; CFQ 2.0 = Cognitive Failure Questionnaire 2.0 The measures used in this study, the Short-form Video Addiction Scale, Mindfulness Attention Awareness Scale, and Cognitive Failures Questionnaire 2.0 demonstrated excellent internal reliability as their respective Cronbach's α values were greater than 0.7 when administered on the study's sample.

**Table 2**

Pearson’s Product-Moment Correlation Analysis for Short-form Video Addiction, Mindfulness, and Cognitive Failures in Undergraduate University Students (N = 239)

Variable	M	SD	1	2	3
1. Short-form Video Addiction	18.83	6.10	-	-.42***	.58***
2. Mindfulness	3.51	.96		-	-.50***
3. Cognitive Failure	22.23	11.04			-

Note.  $p < .001 = ***$ ; M = mean; SD = standard deviation; SVA = Short-form Video Addiction; MAAS = Mindfulness Attention Awareness Scale; CFQ 2.0 = Cognitive Failure Questionnaire 2.0

The results of Pearson’s Product-Moment Correlation showed that short-form video addiction had a significant correlation with cognitive failures, which means that participants with greater levels of SV-addiction had higher levels of cognitive failures. The findings also showed that SV-addiction had a significant negative relation with mindfulness, meaning that the higher the levels of short-form video addiction, the lower the mindfulness in the students. Mindfulness is negatively correlated with cognitive failures.

**Table 3**

Multiple Linear Regression to Predict Cognitive Failures by Short-Form Video Addiction and Mindfulness (N=239)

Predictors	B	SE	B	p	95% CI
Constant		3.48	19.77	<.001	[12.91, 26.64]
Short-form Video Addiction	.49	.099	.81	<.001	[.62, 1.01]
Mindfulness	-.32	.63	-3.65	<.001	[-4.90, -2.41]

$R^2 = .418, F = 84.91, p = <.001$

Note. SE= standard error,  $R^2$  = coefficient of determination,  $\beta$  = coefficient of regression, SVA = Short-form Video Addiction, MAAS = Mindfulness Attention Awareness Scale, CFQ 2.0 = Cognitive Failure Questionnaire 2.0

The results of multiple linear regression showed that short-form video addiction and mindfulness accounted for 41.8% of the variance in cognitive failures, where short-form video addiction is a significant positive predictor of cognitive failures, whereas mindfulness is a significant negative predictor of cognitive failures in undergraduate university students.

**4. Discussion**

The present study examined the impact of short-form video addiction and mindfulness on cognitive failures in university students. Short-form video addiction had a significant positive association with cognitive failures, meaning that participants with greater levels of short-form video addiction had higher levels of cognitive failure. Mindfulness as a trait has a significant negative association with cognitive failure, which implies that the presence of higher levels of mindfulness translates to lower levels of cognitive failure. These findings align with past research. (14,7,10,29,9,27,5,30-32)

The positive association of SVA to cognitive failure can be explained using the cognitive resource theory, which says that cognitive failures occur when cognitive resources are depleted due to excessive use of internet-based applications. An individual’s

psychological balance can be disrupted because of this, which results in them not being able to pay focused attention to life situations, encode and process information important to perform daily tasks, or make cognitive judgments. This results in cognitive failure.<sup>(33,34)</sup> Kohler et al (2023) found that SVA does not produce immediate effects, but people report feeling less concentrated in their daily lives and their attention spans shortening.

The Broaden-and-Build theory states that by practicing mindfulness, a person can enhance their positive emotions and thus be more aware of their environment and experience fewer cognitive errors.<sup>(26)</sup> Similarly, the distraction-conflict theory states that cognitive performance can be improved by practicing mindfulness, as it could enhance cognitive flexibility.<sup>(23)</sup>

Results indicate mindfulness and short-form video addiction are negatively correlated. Short-form video addiction is used as a means of escaping from unpleasant events, as described by the Uses and Gratification theory, which says that individuals use short-form video applications to obtain positive emotions and avoid negative emotions. Mindfulness, on the other hand, is based on Buddhist meditation, where the person is aware of their surroundings. A past study performed on a sample of university students found that those with high mindfulness traits scored lower on the social media addiction scale. Mindfulness is not only known to increase metacognitive alertness but also to help develop positive coping mechanisms so that a person becomes less prone to developing addictions.<sup>(35)</sup> Individuals with a low level of mindfulness lack awareness and the motivation to acquire knowledge from their surroundings.<sup>(23)</sup>

In the past, mindfulness-based interventions were used for other addictions, such as substance abuse and even video game addictions. Studies show that the practice of mindfulness-based interventions can enhance self-regulation of attention by helping individuals focus attention on present moment events and letting go of their cognitive fixations. By enhancing the regulation of

attention, there can be positive effects on coping with negative feelings, unwanted thoughts, and cravings related to addiction. Mindfulness practices are also related to distress reduction as they foster the ability to accept stressful events in life.<sup>(36)</sup>

### **Conclusion:**

The findings suggest that mindful students struggle less with cognitive lapses, and mindfulness may help counteract the adverse effects of short-form video addiction. These results provide a foundation for further research on mitigating the cognitive costs of short-form video addiction.

### **Limitations**

Some limitations in this study need to be addressed for future research. Firstly, some participants were not aware of their time spent on short-form video applications, in addition to that, some participants did not know where on their mobile phones they could check their screen time. As a result, a few reported their overall phone use time while others gave an estimate. In the future, researchers should add proper instructions on where to access screen time information on mobile phones in the questionnaires and make sure that the participants understand.

### **Future Recommendations**

Some students that provided their information could be under the influence of response bias. Being in an academic setting they may want to play down their use of short-form video applications or provide falsified information when asked to report the number of hours spent on these applications. Thus, in the future better steps should be taken to convince them that their reputations will not be harmed in any way so that they feel at ease to provide accurate details. The participants involved belonged to semi-private university so the generalizability of the results may be limited. Pakistani culture is diverse and in order to represent that the

sample should be expanded in future research to encapsulate students of various backgrounds.

### Disclosure /Conflict of interest:

Authors declare no conflict of interest.

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