

**RESEARCH PAPER****Impact of Phubbing on Cognitive Abilities among Impulsive Individuals in Work Settings****¹Rida Zahra, ²Hafiz Muhammad Zeeshan Iqbal* and ³Irum Javaid**

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ABSTRACT

Impulsive individuals may be more vulnerable to phubbing behavior, which can result in cognitive failures. Consequently, it can seriously disrupt one's professional life. This study aimed to investigate how phubbing affects a person's cognition including perception, memory and motor functioning. Sample consisted of working individuals from different institutes of Faisalabad Divisions in Punjab, Pakistan (N = 200). A cross-sectional research design and purposive sampling technique was used to collect data. 'The Phubbing Scale' developed by Karadağ et al. (2015) and 'The Cognitive Assessment Questionnaire' by Broadbent et al. (1982) were used. The findings indicated that phubbing has a profound impact on cognitive abilities among impulsive adults in work settings. This investigation focused exclusively on impulsive individuals. Future studies should incorporate a sample with more diverse characteristics. It underscores the need for awareness about impulsivity, its impact on phubbing behaviors and their adversities on cognitive functioning, especially for those who are in their professional lives.

Keywords: Cognitive Abilities, Impulsive Individuals, Phubbing**Introduction**

Constantly using a mobile phone and being unaware of your surroundings is potentially dangerous. It is a phenomenon first introduced in 2013 by the "Macquarie Dictionary". The term combines the words 'phone' and 'snubbing'. According to this concept, a 'phubber' is a person who uses their phone in a way that affects themselves and others around them. On the other hand, the people affected are called 'phubbees' (Bulut & Nazir, 2019). Phubbing can be defined as ignoring people around you in a social situation, such as a work setting, due to excessive mobile phone use (Jamadi et al., 2023). In the same way, 'Boss Phubbing' is another term used in work environments. It describes bosses who are so engrossed in their phones that they neglect interpersonal interactions. This behavior can negatively affect an employee's well-being. For instance, if a manager exhibits this behavior, it can negatively affect individual morale and team cohesion, leading to tension within the entire organization (Yuda & Suyono, 2024).

Excessive mobile phone usage has been extensively studied in relation to impulsive behavior and cognitive abilities (Kim et al., 2016; Vinayak & Malhotra, 2017; Canale et al., 2019; Guo et al., 2022; Kayış, 2022). However, there is a gap in the literature regarding the association of phubbing behavior with these factors. The current study explored a new area of inquiry that addressed the complex association of phubbing behavior with cognitive abilities among impulsive adults in work settings. While previous studies have established separate associations between impulsivity and smartphone addiction (Kim et al., 2016; Vinayak & Malhotra, 2017; Guo et al., 2022; Kayış, 2022), smartphone addiction and phubbing (Al-Saggaf & O'Donnell, 2019; Isrofin & Munawaroh, 2024), as well as smartphone addiction and cognitive abilities (Canale et al., 2019), the specific connection between

phubbing and cognitive abilities among impulsive adults remained unexplored area in the literature, specifically in the workplace settings.

This study sought to examine the role of phubbing in cognitive failures, or how phubbing affects cognitive abilities, in the presence of impulsivity among adults at workplace. Although empirical evidence of linking impulsivity, phubbing, and cognitive abilities was lacking, the proposed study hypothesized that phubbing may serve as a key factor to influence an individual's cognitive abilities, in the presence of impulsiveness.

Literature Review

Impulsivity is a strong predictor of problematic mobile phone usage (Billieux et al., 2008). Due to impulsiveness, a person may display increased phubbing behavior, as several other studies have found significant positive relationship between impulsivity and smart phone addiction (Kim et al., 2016; Vinayak& Malhotra, 2017; Guo et al., 2022; Kayış, 2022), similarly, a significant positive relationship between smart phone addiction and phubbing behavior (Al-Saggaf& O'Donnell, 2019; Isrofin&Munawaroh, 2024). So, impulsive people can be more engaged in phubbing, because of mobile phone addiction. In the workplace, the prevalence of phubbing can have detrimental effects on productivity and interpersonal relationships.

When individuals prioritize their smartphones over engaging with colleagues or focusing on task-oriented activities, not only it can reduce the quality of communication but also can fosters a culture of distraction and disengagement. This constant distraction or a state of divided attention can exacerbate impulsive tendencies (Jo et al., 2018; Liebherr et al., 2020). Subsequently, this increased impulsivity can lead employees to make rash decisions or struggle with effective prioritization. Moreover, phubbing behavior can cause a person to become absent-minded, leading to forgetfulness. Forgetfulness can lead to difficulties in daily tasks, social embarrassment, and concerns about cognitive health. It affects overall well-being and challenges one's self-awareness (Imhof, 2003). This is because it affects our attention, and a lack of attention can impact memory and motor functioning (Carriere et al., 2008; Yao &Nie, 2023). Similarly, it can also affect perception. Studies suggest that increased phubbing significantly impact the perceived quality of communication and relationship satisfaction (Chotpitayasunondh& Douglas, 2018). In addition, disproportionate smartphone usage also affects an individual's cognitive functioning (Canale et al., 2019). Thus, phubbing behavior must also be contributing to cognitive interference, as phubbing is intrinsically related to smartphone usage (Al-Saggaf& O'Donnell, 2019; Isrofin&Munawaroh, 2021; Bajwa et al., 2023). Therefore, this study aimed to examine the effects of phubbing on cognitive abilities including sensory processing, memory, and motor functioning.

In context of the present study, 'Execution Attention Theory' served as a fundamental framework for understanding the impacts of phubbing on cognitive abilities. According to this theory, attention is a key resource which must be effectively managed to successfully perform the cognitive tasks. So, individuals who are frequently distracted by phubbing behavior compromise their ability to focus attention on relevant tasks. Consequently, this disruption in attention management can lead to errors and lapses in cognitive performance. For example, continuous smartphone interruptions can interfere with the provision of attentional resources. It can further lead towards decreased accuracy in perception and memory recall, as well as impair motor coordination. Thus, by applying 'Execution Attention Theory', the study aimed to explore the influence of phubbing on the efficiency of attention and cognitive tasks. Thereby, it provided insights into the wider implications of such distractions on the everyday cognitive functioning (Hu & Huang, 2023).

Conceptual framework

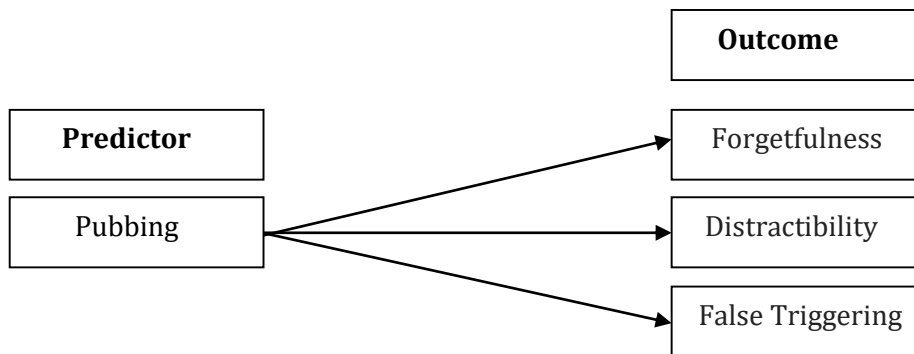


Figure 1 Shows the effect of phubbing on forgetfulness, distractibility and false triggering

Hypotheses

- H1.** Phubbing would be significantly associated with forgetfulness in presence of impulsiveness among adults in work settings.
- H2.** Phubbing would be significantly associated with distractibility in presence of impulsiveness among adults in work settings.
- H3.** Phubbing would be significantly associated with false triggering in presence of impulsiveness among adults in work settings.
- H4.** There would be a significant mean difference of male and female on phubbing behavior and cognitive abilities among impulsive individuals in work settings

Material and Methods

Nature

The nature of the study was co-relational. For this purpose cross-sectional survey research design was used to collect the information to examine the impact of phubbing on cognitive abilities in impulsive individuals.

Population

The population of the present study were impulsive adults, working in different institutions from Faisalabad Division of Punjab, Pakistan

Sample size

Sample of the study were consisted of (N = 200). Participants were initially screened based on their impulsivity and smartphone usage patterns. Only those identified as impulsive and those using their smartphones for three or more than three hours daily were included in the sample. The data was collected from different organizations to select only working adults as a sample of the present study

Sample technique

In the present study, a cross-sectional research design and purposive sampling technique was used to collect the information.

Instrument

Screening procedure involved adding specific questions to the demographic datasheet to assess impulsivity and excessive smartphone use. The four screening questions were as follows: 1) Do you make important decisions without thoroughly considering the consequences? 2) When you receive money, do you spend it immediately on non-essential items? 3) Do you find it difficult to remain patient when waiting for something? 4) How many hours do you spend on your smartphone daily? The first three questions were measuring impulsive behavior, answered with a YES/NO response. While the fourth question offered options: 1-2 hours and 3 or more hours. So, only impulsive individuals, and those who spent 3 or more than 3 hours daily to their smartphone were selected as the sample. Hence, participants who met the criteria from these questions were selected for further data collection. Subsequently, two scales were used to measure phubbing and cognitive abilities.

Phubbing was assessed by using the 10-item scale of Karadağ et al. (2015). This scale evaluates the extent of phubbing behavior on a five-point Likert scale, ranging from 1 = never to 5 = always (Karadağ et al., 2015). Individual can minimum obtain 10 scores whereas maximum scores cannot exceed than 50.

Cognitive abilities were measured using "The Cognitive Assessment Questionnaire", previously known as "The Cognitive Failures Questionnaire". It was developed by Broadbent and colleagues in (1982). It evaluates the frequency of cognitive lapses such as absent-mindedness in daily life, errors and mistakes in perception, memory, and motor functioning. This scale consists of 25 items, scored from 0 to 100 (Broadbent et al., 1982). According to Rast et al., (2009), it has three subscales including 'Forgetfulness', 'Distractibility', and 'False Triggering'.

Validity reliability

The original reliability of phubbing scale is .83. According to Ekimchik and Kryukova (2022), phubbing scale is reliable and valid. According to Ekici et al. (2016) cognitive failures questionnaire is reliable and valid scale. In this study the reliability analysis indicated satisfactory reliability coefficient of phubbing .76, forgetfulness .81, distractibility .84 and false triggering .73.

Pilot Testing

Pilot study was conducted on the limited sample to investigate the psychometric properties of study measures including reliability and validity.

Data analysis technique

Multiple statistical analyses were conducted. Including descriptive statistics for mean, standard deviation, skewness and kurtosis, reliability analyses was run to check the consistency of the scales. In order to explore the relationship between variable, person correlation was performed and regression analysis run to check the effect of phubbing on forgetfulness, false transgering and distractibility to achive the objective.

Ethical consideration

Ethical considerations were of utmost importance throughout the research process, with a strong emphasis on ensuring participant welfare and confidentiality. Participants were provided with detailed information about the study and provided informed consent. Researcher also assured that their involvement was voluntary. They were explicitly informed of their right to withdraw from the study at any point without facing any

consequences. Additionally, participants were guaranteed confidentiality, with assurances that their data would only be used for research purposes and would remain confidential. In the event of any negative emotions arising from participation, participants were assured of access to psychological support services. It's important to note that the research study was conducted with complete transparency and without any form of deception, maintaining the integrity and trustworthiness of the study

Results and Discussion

Table 1
Mean, Standard deviation and Pearson correlation of phubbing, forgetfulness, distractibility and false triggering

Variables	M	SD	A	1	2	3	4
Phubbing	24.23	6.38	.76	---	.85***	.67***	.53***
Forgetfulness	15.81	5.08	.81		---	.62***	.56***
Distractibility	15.54	4.26	.84			---	.66***
False triggering	14.01	3.04	.73				---
Skewness				.50	.59	.13	-.07
Kurtosis				-.93	-.44	-.62	-.78

*P < .05, ** P < .01, *** P < .001

Table 2
Regression Analysis on Depicting Effect of Phubbing on Forgetfulness, Distractibility and False Triggering

Variables	B	Forgetfulness 95 % CI		B	Distractibility 95 % CI		B	False triggering 95 % CI	
		LL	UL		LL	UL		LL	UL
(constant)	-.59	-2.07	.88	4.64***	2.91	6.38	7.90***	6.49	9.32
Phubbing	.81***	.62	.74	.67***	.38	.52	.52***	.19	.31
R ²		.72			164.62			.28	
F		517.01			.45			76.85	

* p< .05, ** p< .01, *** p< .001

Table 3
Mean, Standard Deviation and t -Values of Men and Women on Phubbing, Forgetfulness, Distractibility and False Triggering

Variables	Men (n = 123)		Women (n = 77)		t (198)	95% CI		Cohens , 'd
	M	SD	M	SD		LL	UL	
Phubbing	21.86	4.62	28.01	6.98	-7.49***	-7.76	-4.53	1.03
Forgetfulness	14.18	3.28	18.41	6.26	-6.24***	-5.56	-2.89	.84
Distractibility	14.97	3.06	16.45	5.57	-2.41*	-2.68	-.27	.32
False triggering	13.81	2.58	14.29	3.64	-1.02	-1.42	.45	.15

*p< .05, ** p< .01, *** p < .001

Discussion

The results suggested that individuals who were frequently engaged in phubbing behavior experienced notable impairments in their cognitive abilities, such as forgetfulness, distractibility, and false triggering. Since the study was conducted on working adults who showed impulsive behaviors, it was proved that the first three hypotheses were completely accepted. First hypothesis H1 was stated as; "Phubbing would be significantly associated with forgetfulness in the presence of impulsiveness among adults in work settings". The hypothesis was accepted. Results shows that phubbing had a notable impact on forgetfulness. This suggests that frequent distractions caused by smartphone use and ignoring surroundings because of its use can impair an individual's ability to remember and retain information. Thus, it can be interpreted that if individuals remain preoccupied with their phones, their attention gets diverted from important tasks and interactions. Consequently, this constant diversion can lead to lapses in memory and increased

forgetfulness. As a result, individuals may struggle to recall the information. This finding highlights that phubbing may interrupt focus and attention, which in turn can contribute to a decline in memory performance. The literature supported this finding. Kancharla et al. (2022) studied the connection between excessive mobile use and cognitive failures through a neurological evaluation and path model analysis. They highlighted that there is a significant relationship between excessive mobile use and forgetting.

H2 stated that “Phubbing would be significantly associated with distractibility in the presence of impulsiveness among adults in work settings”. The findings confirmed the hypothesis. It indicates that individuals who were frequently engaged in phubbing were more disposed to being easily distracted, especially in the presence of impulsive behaviors. Additionally, in work environments, phubbing makes it harder for individuals to maintain focus on their tasks. Moreover, when it is combined with impulsiveness, it drives people to act quickly without thoughtful consideration. Therefore, the impact of phubbing on attention may become even more noticeable. These results underscore that phubbing not only disrupts attention but can also increase distractibility in professional settings, in the presence of impulsive tendencies. Literature review also supported these results. A study proposed that excessive use of handier devices, such as mobile phones, and multitasking are linked to distractibility and impulsiveness (Levine et al., 2012). Another study found that problematic smartphone use intensified the effect of both state and trait anxiety on distractibility. Those with high smartphone use and high trait anxiety made more errors in distractibility during times of high state anxiety. Nevertheless, the study did not support predictions about false triggering and forgetfulness. Rather it only found a trend linking higher trait anxiety to increased failures in these areas (Edwards et al., 2023).

The third hypothesis H3 stated that “Phubbing would be significantly associated with false triggering in the presence of impulsiveness among adults in work settings”. The results confirmed that phubbing is significantly associated with false triggering, particularly if impulsiveness is present among adults in work settings. This finding suggests that frequent interruptions caused by phubbing can lead to disruptions in the sequence of cognitive and motor actions. Literature supported this finding too, as Kancharla et al. (2022) conducted a study which revealed that excessive smartphone usage has a significant relation with false triggering. Another study investigated the connection between excessive mobile use and cognitive failures. The researcher divided participants into two groups based on their scores (high and low) for internet addiction and problematic mobile use. The findings indicated a relationship between pathological mobile use and false triggering. Furthermore, it also revealed that the group having higher scores on internet addiction and problematic mobile use, exhibited higher levels of cognitive lapses (Hadlington, 2015).

Likewise, H4 stated that “There would be a significant mean difference of males and females on phubbing behavior and cognitive abilities among impulsive individuals in work settings”. This hypothesis was partially accepted. Results revealed that there was no gender difference in phubbing, but there was a difference in its relationship with cognitive failures. Women have shown more forgetfulness, distractibility and false triggering than men. It shows that women are more affected by phubbing than men. In other words, women’s cognitive abilities can be more affected by the phubbing behavior they show, as compared to men. Literature supported these findings. A study investigated the relationship between smartphone addiction and cognitive failure. It found no gender difference in mobile phone addiction (Irshad&Karamat, 2009).

Likewise, an investigation on the excessive smartphone usage revealed that it might negatively impact users' thinking, memory, and attention over time. Its results highlighted that frequent smartphone use has been associated with an increased risk of cognitive impairment including forgetting, inability to concentrate, and spurious triggering (Kancharla et al., 2022). Since excessive mobile phone usage is strongly associated with

phubbing behavior (Al-Saggaf & O'Donnell, 2019; Isrofin & Munawaroh, 2024), it can be concluded that phubbing may also be positively associated with cognitive failures.

However, no existing study provided direct confirmation to any of the hypotheses, as phubbing is not studied with cognitive abilities before. Thus, it signifies the distinctiveness of the results of present study and introduces a novel contribution to the existing literature.

Conclusion

This study shows that an impulsive person is more likely to exhibit phubbing behavior. It also demonstrated that phubbing behavior can lead to cognitive failures. The scale used in this study primarily measured cognitive failures, and the results confirmed that phubbing has a significant relationship with forgetfulness, distractibility, and false triggering. In other words, phubbing can cause cognitive failures, which is a serious issue and requires further research. Furthermore, the results showed that the consequences of phubbing were more pronounced in women. After further research on it to prove the results, the study will enable psychologists to use this information to benefit society.

Recommendations

Peoples may need to reduce their mobile phone usage and control their phubbing behavior to avoid cognitive failures. This study has restricted generalizability in the sense that it used a small sample size. In future studies it should be carried out on large sample to have wide-ranging generalizations. Furthermore, a longitudinal research design or mix methods will use in future to know the cause and effect. Due to self-reported measure, there are chances of social desirability. The 360 technique could be used to avoid this issue in future.

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